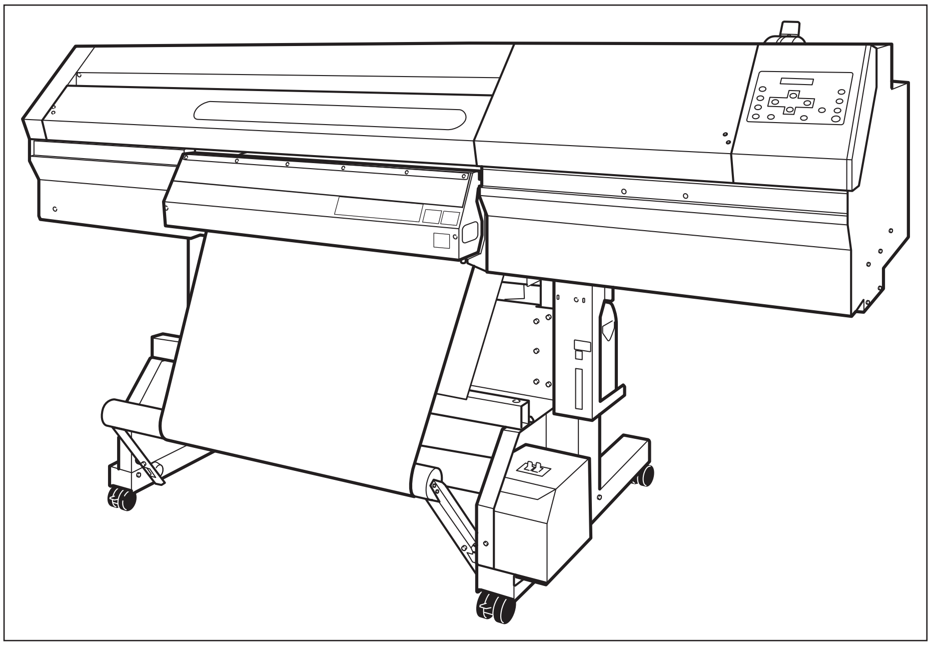
Roland

VersaUV
PRINT&CUT

LEC-330

USER'S MANUAL



Thank you very much for purchasing this product.

○ To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location.
○ Unauthorized copying or transferral, in whole or in part, of this manual is prohibited.
○ The contents of this operation manual and the specifications of this product are subject to change without notice.
○ The operation manual and the product have been prepared and tested as much as possible. If you find any misprint or error, please inform us.
○ Roland DG Corp. assumes no responsibility for any direct or indirect loss or damage which may occur through use of this product, regardless of any failure to perform on the part of this product.
○ Roland DG Corp. assumes no responsibility for any direct or indirect loss or damage which may occur with respect to any article made using this product.

Roland DG Corporation

For USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

For Canada

CLASS A NOTICE

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

CLASSE A AVIS

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

For California

WARNING

This product contains chemicals known to cause cancer, birth defects and other reproductive harm, including lead.

For EU Countries

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

NOTICE

Grounding Instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately.

Operating Instructions

KEEP WORK AREA CLEAN. Cluttered areas and benches invites accidents.

DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and like.

REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure the switch is in off position before plugging in.

USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

For EU Countries

CE

Manufacturer:
ROLAND DG CORPORATION
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN

The authorized representative in the EU:
Roland DG Corporation, German Office Halskestr. 7, 47877 Willich,Germany

This product is using GNU General Public License (GPL) / GNU Lesser General Public License (LGPL) software. You have the right to acquire, modify, and distribute the source code for this GPL/LGPL software. You can obtain the GPL/LGPL source code used in this product by downloading it from the following website.
URL: http://www.rolanddg.com/gpl/

RolandDG Corp. has licensed the MMP technology from the TPL Group.

Contents

⚠ **To Ensure Safe Use** 4

⚠ **Pour utiliser en toute sécurité** 11

Important Notes on Handling and Use 18
- Printer Unit 18
- Ink Cartridges 19

Chapter 1 Introduction 21
- 1-1 Features 22
  - Features of the Machine 22
  - Features of ECO-UV inks 22
  - Other User's Manuals 22
- 1-2 Part Names and Functions 23
  - Printer Unit 23
  - Operation Panel 25
  - Media Take-up System 26

Chapter 2 Basic Operation 27
- 2-1 Before Starting Operations 28
  - Before Starting the Day's Work 28
  - Automatic Maintenance Feature 28
- 2-2 Switching the Power On and Off 29
  - Switching the Power On and Off 29
  - The Power-saving Feature 30
- 2-3 Loading and Cutting Off Media 31
  - Loading Media 31
  - Cutting Off the Media 38
- 2-4 Starting Printing 39
  - Getting Ready to Receive Data from a Computer 39
  - Printing Tests and Cleaning 40
- 2-5 If Ink Runs Out 42
  - Checking for Remaining Ink 42
  - If Ink Runs Out 42
- 2-6 Performing Cutting 44
  - To Perform Cutting 44
  - Performing a Cutting Test 45
  - Making the Setting for Blade Force 46

Chapter 3 Operation of the Media Take-up System 47
- 3-1 The Media Take-up System 48
  - Features of the Media Take-up System 48
  - Operating Conditions for the Media Take-up System 48
  - About the Paper Tube 48
- 3-2 Using the Media Take-up System 49
  - Loading Roll Media 49
  - Removing Taken-up Media 52

Chapter 4 Maintenance and Adjustment 53
- 4-1 Daily Care and Maintenance 54
  - Disposing of Discharged Ink 54
  - Cleaning 56
  - Care and Maintenance of the Print Heads 56
- 4-2 When Head Cleaning Is Not Effective 57
  - Performing More Powerful Cleaning 57
  - When Powerful Cleaning Is Not Effective 58

4-3 Cleaning Using the Cleaning Kit 59
When the Cleaning Kit Becomes Necessary 59
How to Perform Cleaning 59
4-4 Replacing Consumable Parts 64
Replacing the Wipers 64
Replacing the Blade 67
Replacing the Separating Knife 69
4-5 Adjustment of White Ink 71
Maintenance Tasks for White Ink 71
4-6 When Not in Use for a Prolonged Period 72
Keep Performing Maintenance 72
Alarm Feature 72
Important Note on Draining Ink 72
4-7 When Moving the Unit 73
Procedures from Preparing to Move Through Reinstalling 73

Chapter 5 Feature Reference 75

5-1 Pausing or Canceling Output 76
Canceling Output Before It Finishes 76
5-2 Setting the Print-start Position 77
Setting the Print-start Position 77
5-3 Accommodating Various Kinds of Media 78
Using Transparent Media 78
Preventing Media from Coming Loose 78
Speeding Up Printing for Narrow Media 79
Preventing Soiling of the Media and Dot Drop-out During Printing 80
Printing Media That Warps Easily 80
How to Load Sheet Media 82
5-4 Changing How the Printer Operates 85
Executing Environment Matching Automatically 85
Determining What Happens When Ink Runs Out 85
Setting the Interval until Activation of the Sleep Mode 86
Deactivating the Sleep Mode 86
Changing the Menu Language and the Units of Measurement 87
Returning All Settings to Their Initial Values 87
5-5 Optimizing Printing to Match Media Thickness 88
Adjusting Head Height to Match Media Thickness 88
Correcting for Misalignment in Bidirectional Printing 89
Correcting for Misalignment in Bidirectional Printing More Precisely 90
Performing Feed Correction to Alleviate Horizontal Bands and the Like 92
Performing Distance Correction During Cutting 93
5-6 Making Various Adjustments for Cutting 95
Making the Cutting Conditions Set on the Machine Take Precedence 95
Fine-tuning the Cutting Conditions 95
Adjusting the Cutting-in Amount 96
Adjusting for When Cutting the Printed Surface 97
Preventing Pulling of the Media with Undue Force When Performing Cutting Only 99
Correcting Misalignment of the Printing and Cutting Positions 100
5-7 Performing Printing and Cutting Separately 102
To Perform Printing and Cutting Separately 102
Printing with Crop Marks 102
Aligning Automatically and Cutting 103
Aligning Manually and Cutting 104
Correcting Misalignment for Printing and Cutting When Using Crop Marks 105
5-8 Gloss Ink Features and Printing Methods 108
Features of Gloss Ink 108
Methods of Printing Using Gloss Ink 108
5-9 White Ink Features and Printing Methods 109
Features of White Ink 109
Methods of Printing Using White Ink 109

5-10 Saving the Printer Settings to Match the Media 110
Saving Optimized Media Settings As Preset Values 110
Loading a Saved Preset 111
Assigning a Name to a Preset 111
5-11 Making the Network Settings 112
Setting the IP Address, Subnet Mask, Etc. 112
5-12 Viewing Information about the Media and the System 113
Displaying the Amount of Media Remaining 113
Verifying the Setting for the Amount Remaining Every Time the Media Is Changed 113
Printing the Amount of Remaining Media 114
Printing a System Report 114
Viewing the Serial Number, Firmware Version, and Other Information 115
Viewing the Network Settings 115
5-13 Performing Maintenance 117
Draining Ink and Performing Internal Washing 117
Draining Ink Remaining Inside the Machine 117
5-14 Menu List 118
Main Menu 118
Language and Unit Menu 123
Cleaning Menu 123
Cutting Configuration Menu 123

Chapter 6 What to Do If 125

6-1 The Machine Doesn't Run 126
The Printer Unit Doesn't Run 126
The Media Take-up System Doesn't Run 126
6-2 Attractive Printing Is Impossible 127
Printed Results Are Coarse or Contain Horizontal Stripes 127
Colors Are Unstable or Uneven 127
The Media Becomes Soiled When Printed 128
Cutting Is Misaligned or Skewed 128
6-3 The Media Jams 129
The Media Jams 129
6-4 The Media Cannot Be Taken Up Smoothly 130
The Media Cannot Be Taken Up Smoothly 130
6-5 Media Wrinkles or Shrinks, or Feed Is Unstable 131
Media Wrinkles or Shrinks 131
Media Feed Is Not Straight 131
Media Feed Is Not Smooth 131
6-6 The Print Heads Stopped Moving 132
What to Do First 132
If the Heads Still Do Not Move 132
6-7 If a Message Appears 133
6-8 If an Error Message Appears 134

Chapter 7 Specifications 137

7-1 Usable Media 138
Conditions for Usable Media 138
7-2 Printing or Cutting Area 139
Maximum Area 139
Maximum Area When Using Crop Marks 139
Media-cutoff Location During Continuous Printing 140
7-3 About the Blade 141
7-4 Locations of the Power Rating and Serial Number Labels 142
7-5 Specifications 143

Company names and product names are trademarks or registered trademarks of their respective holders.

Copyright © 2009 Roland DG Corporation

http://www.rolanddg.com/

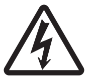
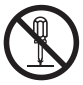
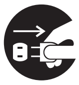
⚠ To Ensure Safe Use

Improper handling or operation of this machine may result in injury or damage to property. Points which must be observed to prevent such injury or damage are described as follows.

About ⚠ WARNING and ⚠ CAUTION Notices

⚠ WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠ CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. Note: Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The △ symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. The symbol at left means "danger of electrocution."
	The ⃠ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. The symbol at left means the unit must never be disassembled.
	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. The symbol at left means the power-cord plug must be unplugged from the outlet.

⚠ Incorrect operation may cause injury

⚠WARNING

Be sure to follow the operation procedures described in this documentation. Never allow anyone unfamiliar with the usage or handling of the machine to touch it.
Incorrect usage or handling may lead to an accident.

Keep children away from the machine.
The machine includes areas and components that pose a hazard to children and may result in injury, blindness, choking, or other serious accident.

Never operate the machine while tired or after ingesting alcohol or any medication.
Operation requires unimpaired judgment. Impaired judgment may result in an accident.

Never use the machine for any purpose for which it is not intended, or use the machine in an undue manner that exceeds its capacity.
Doing so may result in injury or fire.

For accessories (optional and consumable items, power cord, and the like), use only genuine articles compatible with this machine.
Incompatible items may lead to an accident.

Before attempting cleaning, maintenance, or attachment or detachment of optional items, disconnect the power cord.
Attempting such operations while the machine is connected to a power source may result in injury or electrical shock.

Never attempt to disassemble, repair, or modify the machine.
Doing so may result in fire, electrical shock, or injury. Entrust repairs to a trained service technician.

⚠CAUTION

Exercise caution to avoid being pinched or becoming caught.
Inadvertent contact with certain areas may cause the hand or fingers to be pinched or become caught. Use care when performing operations.

Never attempt operation while wearing a necktie, necklace, or loose clothing. Bind long hair securely.
Such items may become caught in the machine, resulting in injury.

Conduct operations in a clean, brightly lit location.
Working in a location that is dark or cluttered may lead to an accident, such as becoming caught in the machine as the result of an inadvertent stumble.

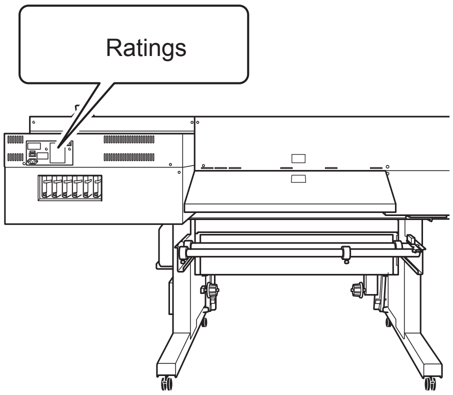
Never climb or lean on the machine.
The machine is not made to support a person. Climbing or leaning on the machine may dislodge components and cause a slip or fall, resulting in injury.

Caution: cutting tool.
This machine has an internal tool. To avoid injury, handle the tool with care.

⚠ Danger of electrical short, shock, electrocution, or fire

⚠ WARNING

Connect to an electrical outlet that complies with this machine's ratings (for voltage, frequency, and current).
Incorrect voltage or insufficient current may cause fire or electrical shock.



Never use out of doors or in any location where exposure to water or high humidity may occur. Never touch with wet hands.
Doing so may result in fire or electrical shock.

Never allow any foreign object to get inside. Never expose to liquid spills.
Inserting objects such as coins or matches or allowing beverages to be spilled into the ventilation ports may result in fire or electrical shock. If anything gets inside, immediately disconnect the power cord and contact your authorized Roland DG Corp. dealer.

Never place any flammable object nearby. Never use a combustible aerosol spray nearby. Never use in any location where gases can accumulate.
Combustion or explosion may be a danger.

⚠ WARNING

Handle the power cord, plug, and electrical outlet correctly and with care. Never use any article that is damaged.
Using a damaged article may result in fire or electrical shock.

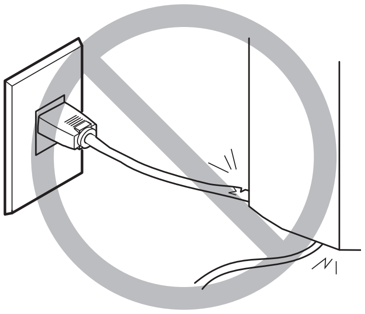
When using an extension cord or power strip, use one that adequately satisfies the machine's ratings (for voltage, frequency, and current).
Use of multiple electrical loads on a single electrical outlet or of a lengthy extension cord may cause fire.

Connect to ground.
This can prevent fire or electrical shock due to current leakage in the event of malfunction.

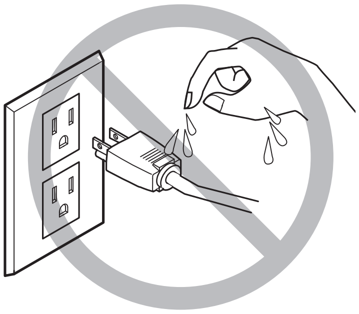
Position so that the power plug is within immediate reach at all times.
This is to enable quick disconnection of the power plug in the event of an emergency. Install the machine next to an electrical outlet. Also, provide enough empty space to allow immediate access to the electrical outlet.

If sparking, smoke, burning odor, unusual sound, or abnormal operation occurs, immediately unplug the power cord. Never use if any component is damaged.
Continuing to use the machine may result in fire, electrical shock, or injury. Contact your authorized Roland DG Corp. dealer.

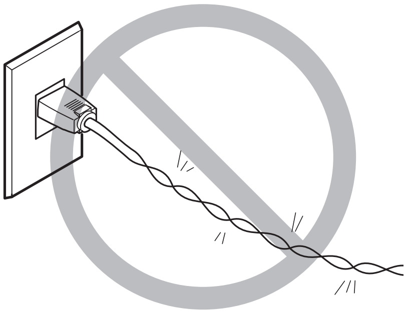
⚠ Important notes about the power cord, plug, and electrical outlet



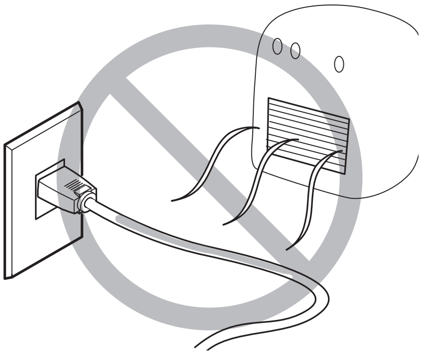
Never place any object on top or subject to damage.



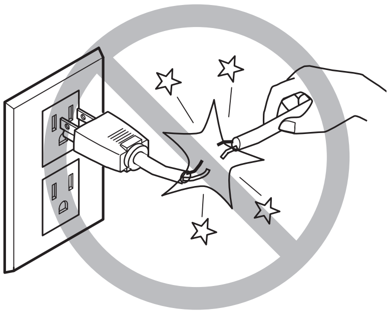
Never allow to get wet.



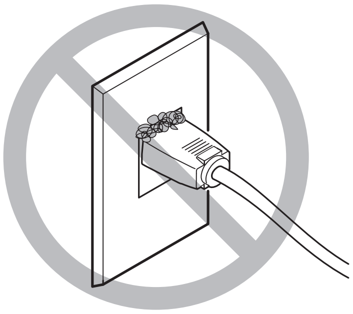
Never bend or twist with undue force.



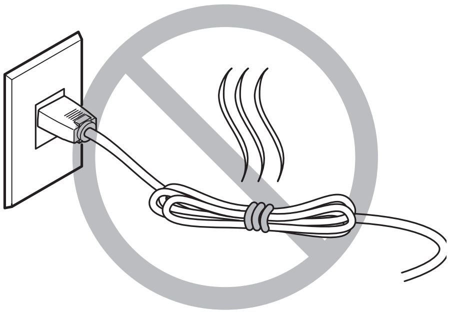
Never make hot.



Never pull with undue force.



Dust may cause fire.



Never bundle, bind, or roll up.

⚠ Ink, cleaning fluid, and discharged fluid are flammable and toxic

⚠ WARNING

Keep open flame away from the work area.
Ink and discharged fluid are flammable.

Never store ink, cleaning fluid, or discharged fluid in any of the following locations.
○ Any location exposed to open flame
○ Any location where high temperature may occur
○ Near bleach or any other such oxidizing agent or explosive material
○ Any location within the reach of children
Fire may be a danger. Accidental ingestion by children may pose a health hazard.

Never place an ink cartridge in fire.
Ink may flow out, catch fire, and spread fire to other nearby objects.

Never drink or sniff ink, cleaning fluid, or discharged fluid, or allow them to come in contact with the eyes or skin.
Doing so may be hazardous to the health.

⚠ CAUTION

Ensure adequate ventilation for the work area.
Failing to perform ventilation may result in a health hazard or danger of combustion due to ink fumes.

Never allow an ink cartridge to be subjected to impact, and never attempt to disassemble.
Ink may leak.

⚠ In the event of ingestion or physical distress

○ In the event of contact with the eyes, immediately flush with water for at least 15 minutes. If eye irritation continues, seek treatment by a physician.
○ In the event of contact with skin, immediately wash with soap. If irritation or inflammation occurs, seek treatment by a physician.
○ In the event of ingestion, do not induce vomiting, and immediately seek treatment by a physician. Forcibly inducing vomiting may lead to danger of choking.
○ If odor leads to physical distress, move to a well-ventilated location and rest quietly. If dizziness or nausea persists, seek treatment by a physician.

⚠ This machine weighs 210 kg (463 lb.). Media weighs 20 kg (44 lb.).

⚠ WARNING

Install the machine in a location that is level, stable, and able to bear the weight of the machine.
The total weight of the machine may reach 210 kg (463 lb.) or more. Installation in an unsuitable location may cause a major accident, including tip over, fall, or collapse.

Unloading and emplacement are operations that must be performed by 6 persons or more.
Tasks that require undue effort when performed by a small number of persons may result in physical injury. Also, if dropped, such items may cause injury.

⚠ WARNING

Be sure to lock the stand's casters.
If the machine should begin to topple, a major accident may result, including crushing of the appendages or the body.

When storing roll media, implement adequate safety measures to ensure that the stored media will not roll, fall, or topple over.
Danger exists of becoming pinned under the media and suffering serious injury.

Handling roll media is an operation that must be performed by two persons or more, and care must be taken to prevent falls.
Attempting to lift heavy media in a manner that taxes your strength may cause physical injury.

⚠ This machine uses ultraviolet light.

⚠ CAUTION

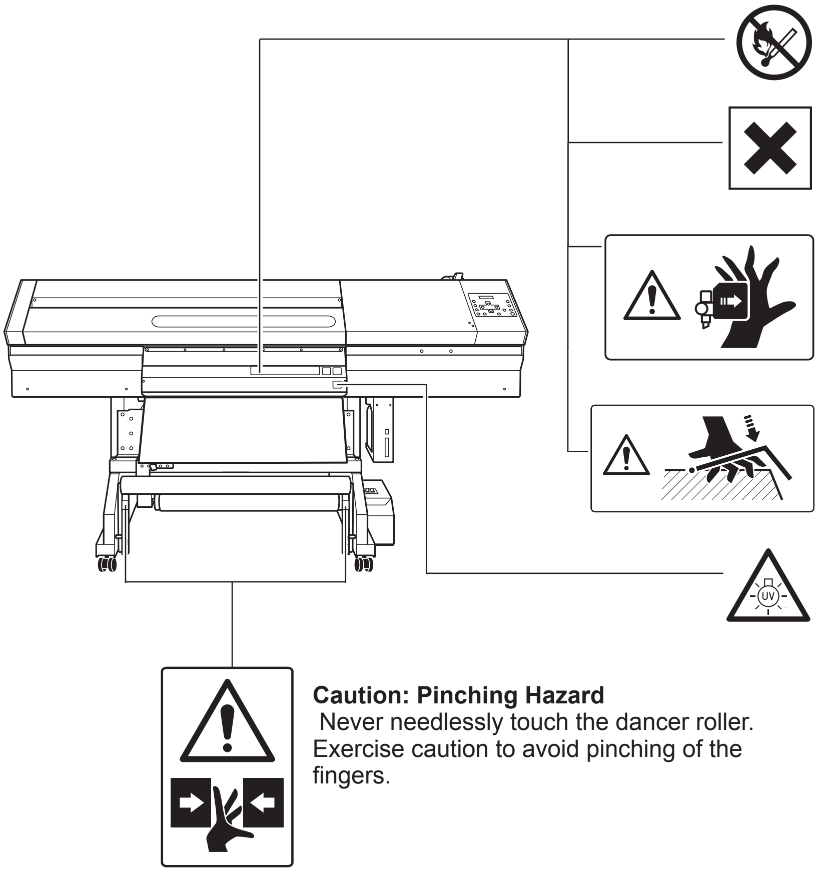
Never look at the blue-white (ultraviolet) light emitted from the print-head area for an extended time.
Looking directly at the ultraviolet light from up close for an extended period may result in eye injury.

⚠ Caution: Ultraviolet Light

This machine is fitted with covers to keep external leakage of ultraviolet light at low levels, but incorrect handling or operation can lead to physical injury due to ultraviolet light. The extent of injury depends on the intensity and wavelength of the ultraviolet light, and the length of time of exposure. Prolonged exposure to strong ultraviolet light of hazardous wavelengths can cause injury to the eyes or skin. Exercise caution.

⚠ Warning Labels

Warning labels are affixed to make areas of danger immediately clear. The meanings of these labels are as follows. Be sure to heed their warnings.
Also, never remove the labels or allow them to become obscured.



Flammable
Ink and discharged fluid are flammable. Keep away from open flame.

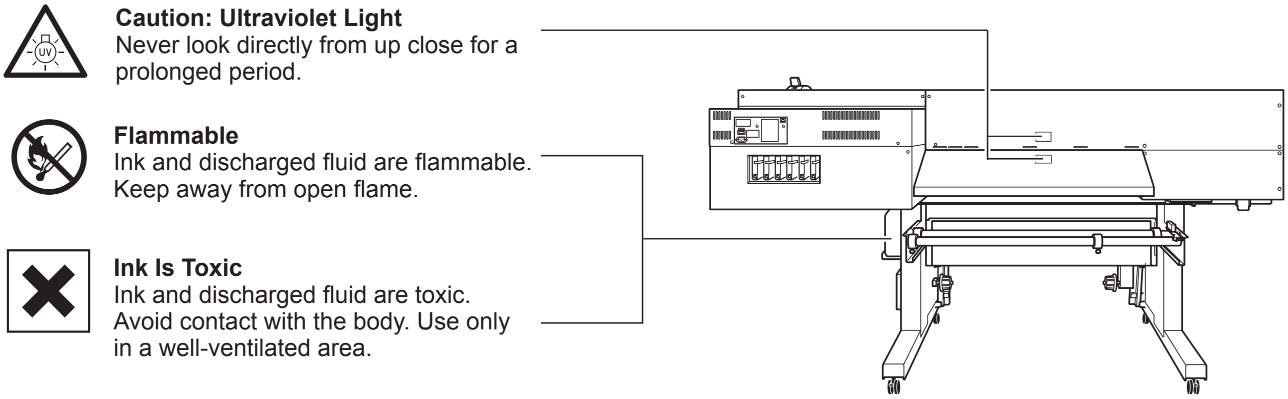
Ink Is Toxic
Ink and discharged fluid are toxic. Avoid contact with the body. Use only in a well-ventilated area.

Caution: Moving Print Heads
The print heads inside the cover move at high speed and pose a hazard. Never insert the hand or fingers into the gap.

Caution: Pinching Hazard
Be careful not to allow the fingers to become pinched when loading media or closing covers.

Caution: Ultraviolet Light
Never look directly from up close for a prolonged period.

Caution: Pinching Hazard
Never needlessly touch the dancer roller. Exercise caution to avoid pinching of the fingers.



Caution: Ultraviolet Light
Never look directly from up close for a prolonged period.

Flammable
Ink and discharged fluid are flammable. Keep away from open flame.

Ink Is Toxic
Ink and discharged fluid are toxic. Avoid contact with the body. Use only in a well-ventilated area.

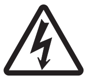
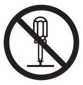
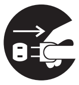
⚠ Pour utiliser en toute sécurité

La manipulation ou l'utilisation inadéquates de cet appareil peuvent causer des blessures ou des dommages matériels. Les précautions à prendre pour prévenir les blessures ou les dommages sont décrites ci-dessous

Avis sur les avertissements

⚠ ATTENTION	Utilisé pour avertir l'utilisateur d'un risque de décès ou de blessure grave en cas de mauvaise utilisation de l'appareil.
⚠ PRUDENCE	Utilisé pour avertir l'utilisateur d'un risque de blessure ou de dommage matériel en cas de mauvaise utilisation de l'appareil. *Par dommage matériel, il est entendu dommage ou tout autre effet indésirable sur la maison, tous les meubles et même les animaux domestiques.

À propos des symboles

	Le symbole △ attire l'attention de l'utilisateur sur les instructions importantes ou les avertissements. Le sens précis du symbole est déterminé par le dessin à l'intérieur du triangle. Le symbole à gauche signifie "danger d'électrocution."
	Le symbole ⃠ avertit l'utilisateur de ce qu'il ne doit pas faire, ce qui est interdit. La chose spécifique à ne pas faire est indiquée par le dessin à l'intérieur du cercle. Le symbole à gauche signifie que l'appareil ne doit jamais être démonté.
	Le symbole ● prévient l'utilisateur sur ce qu'il doit faire. La chose spécifique à faire est indiquée par le dessin à l'intérieur du cercle. Le symbole à gauche signifie que le fil électrique doit être débranché de la prise.

⚠ L'utilisation incorrecte peut causer des blessures

⚠ ATTENTION

S'assurer de suivre les procédures d'utilisation décrites dans la documentation. Ne jamais permettre à quiconque ne connaît pas le fonctionnement ou la manutention de l'appareil de le toucher.
L'utilisation ou la manutention incorrectes peuvent causer un accident.

Garder les enfants loin de l'appareil.
L'appareil comporte des zones et des composants qui présentent un danger pour les enfants et qui pourraient causer des blessures, la cécité, la suffocation ou d'autres accidents graves.

Ne jamais faire fonctionner l'appareil après avoir consommé de l'alcool ou des médicaments, ou dans un état de fatigue.
L'utilisation de l'appareil exige un jugement sans faille. L'utilisation avec les facultés affaiblies pourrait entraîner un accident.

Ne jamais utiliser l'appareil à des fins autres que celles pour lesquelles il est conçu. Ne jamais l'utiliser de manière abusive ou d'une manière qui dépasse sa capacité.
Le non-respect de cette consigne peut causer des blessures ou un incendie.

Utiliser uniquement des accessoires d'origine (accessoires en option, articles consommables, câble d'alimentation et autres articles semblables), compatibles avec l'appareil.
Les articles incompatibles risquent de causer des accidents.

Débrancher le câble d'alimentation avant de procéder au nettoyage ou à l'entretien de l'appareil, et avant d'y fixer ou d'en retirer des accessoires en option.
Tenter ces opérations pendant que l'appareil est branché à une source d'alimentation peut causer des blessures ou un choc électrique.

Ne jamais tenter de démonter, de réparer ou de modifier l'appareil.
Le non-respect de cette consigne risque de provoquer un incendie, un choc électrique ou des blessures. Confier les réparations à un technicien ayant la formation requise.

⚠ PRUDENCE

Faire preuve de prudence pour éviter l'écrasement ou le coincement.
La main ou les doigts peuvent être écrasés ou coincés s'ils entrent en contact avec certaines surfaces par inadvertance. Faire preuve de prudence pendant l'utilisation de l'appareil.

Ne jamais faire fonctionner l'appareil si on porte une cravate, un collier ou des vêtements amples. Bien attacher les cheveux longs.
Ces vêtements ou ces objets peuvent être coincés dans l'appareil, ce qui causerait des blessures.

Utiliser l'appareil dans un endroit propre et bien éclairé.
Travailler dans un endroit sombre ou encombré peut causer un accident; l'utilisateur risque, par exemple, de trébucher malencontreusement et d'être coincé par une partie de l'appareil.

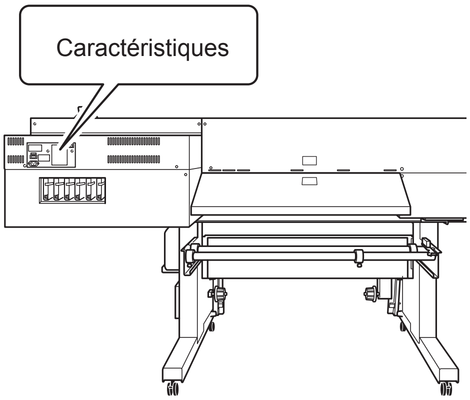
Ne jamais grimper ni s'appuyer sur la machine.
La machine n'est pas conçue pour supporter le poids d'une personne. Grimper ou s'appuyer sur la machine peut déplacer des éléments et causer un faux pas ou une chute, ce qui causerait des blessures.

Attention : outil de coupe.
Cet appareil contient un outil interne. Pour éviter les blessures, manipuler l'outil avec soin.

⚠ Risque de décharge ou de choc électrique, d'électrocution ou d'incendie

⚠ ATTENTION

Brancher à une prise électrique conforme aux caractéristiques de cet appareil (tension, fréquence et courant).
Une tension incorrecte ou un courant insuffisant peuvent causer un incendie ou un choc électrique.



Ne jamais utiliser à l'extérieur ni à un endroit où l'appareil risque d'être exposé à de l'eau ou à une humidité élevée. Ne jamais toucher l'appareil avec des mains mouillées.
Le non-respect de cette consigne risque de provoquer un incendie ou un choc électrique.

Ne jamais insérer d'objet étranger dans l'appareil. Ne jamais exposer l'appareil aux déversements de liquides.
L'insertion d'objets comme des pièces de monnaie ou des allumettes, ou le déversement de liquides dans les orifices de ventilation peuvent causer un incendie ou un choc électrique. Si un objet ou du liquide s'infiltre dans l'appareil, débrancher immédiatement le câble d'alimentation et communiquer avec le représentant Roland DG Corp. autorisé.

Ne jamais placer d'objet inflammable à proximité de l'appareil. Ne jamais utiliser de produit inflammable en aérosol à proximité de l'appareil. Ne jamais utiliser l'appareil dans un endroit où des gaz peuvent s'accumuler.
Une combustion ou une explosion pourraient se produire.

⚠ ATTENTION

Manipuler le câble d'alimentation, la fiche et la prise électrique correctement et avec soin.
Ne jamais utiliser un article endommagé, car cela pourrait causer un incendie ou un choc électrique.

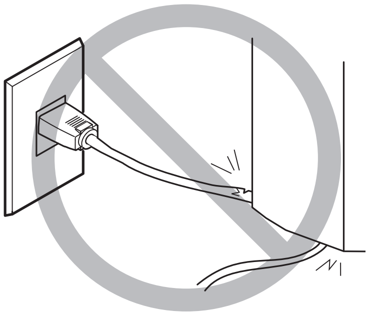
Si une rallonge ou une bande d'alimentation électrique sont utilisées, s'assurer qu'elles correspondent aux caractéristiques de l'appareil (tension, fréquence et courant).
L'utilisation de plusieurs charges électriques sur une prise unique ou une longue rallonge peut causer un incendie.

Mise à la terre.
La mise à la terre peut prévenir un incendie ou un choc électrique dus à une fuite de courant en cas de défaillance.

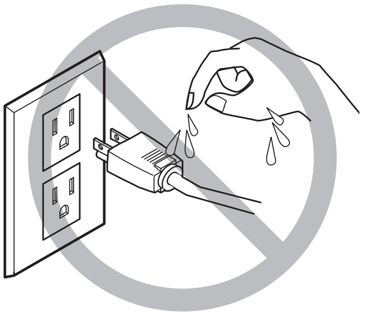
Placer l'appareil de façon à ce que la fiche soit facile d'accès en tout temps.
Ainsi, l'appareil pourra être débranché rapidement en cas d'urgence. Installer l'appareil près d'une prise électrique. En outre, prévoir suffisamment d'espace pour que la prise électrique soit facile d'accès.

S'il se produit des étincelles, de la fumée, une odeur de brûlé, un bruit inhabituel ou un fonctionnement anormal, débrancher immédiatement le câble d'alimentation. Ne jamais utiliser si un composant est endommagé.
Continuer à utiliser l'appareil peut causer un incendie, un choc électrique ou des blessures. Communiquer avec le représentant Roland DG Corp. Autorisé.

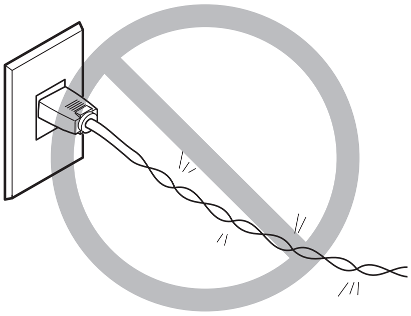
⚠ Remarques importantes à propos du câble d'alimentation, de la fiche et de la prise électrique



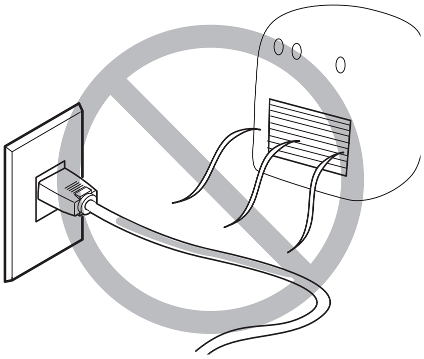
Ne jamais déposer aucun objet sur le câble, sur la fiche ou sur la prise car cela risque de les endommager.



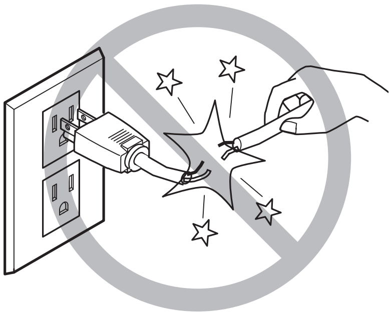
Ne jamais laisser l'eau toucher le câble, la fiche ou la prise.



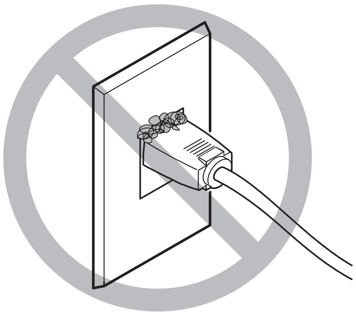
Ne jamais plier ni tordre le câble avec une force excessive.



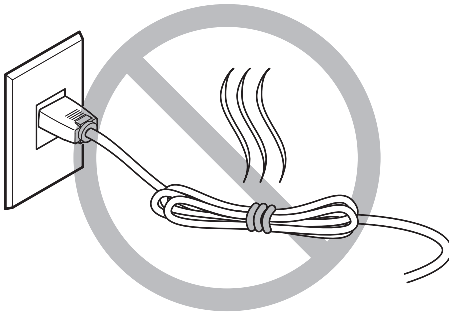
Ne jamais chauffer le câble, la fiche ou la prise.



Ne jamais tirer sur le câble ou la fiche avec une force excessive.



La poussière peut causer un incendie.



Ne jamais plier ni enrouler le câble.

⚠ L'encre, les liquides nettoyants et les liquides usées sont inflammables et toxiques

⚠ ATTENTION

Ne pas approcher une flamme nue de l'espace de travail.
L'encre et les liquides usés sont inflammables.

Ne jamais entreposer d'encre, de liquide de nettoyage ou des liquides usés dans les endroits suivants :
- ○ **un endroit exposé à une flamme nue;**
- ○ **un endroit où il y a risque de température élevée;**
- ○ **près d'eau de Javel, d'un autre agent d'oxydation ou de matériel explosif;**
- ○ **tout endroit à la portée d'enfants.**

Il y a risque d'incendie. L'ingestion accidentelle par un enfant peut présenter un risque pour la santé.

Ne jamais incinérer une cartouche d'encre.
De l'encre pourrait couler, s'enflammer et le feu se répandre à des objets proches.

Ne jamais boire l'encre, le liquide de nettoyage ni les liquides usés, ne pas en respirer les vapeurs et ne pas laisser les produits entrer en contact avec les yeux ou la peau.
Cela est dangereux pour la santé.

⚠ PRUDENCE

S'assurer que le lieu de travail est bien aéré.
L'absence d'aération adéquate peut créer une situation dangereuse pour la santé ou un risque de combustion à cause des vapeurs qui émanent de l'encre.

Ne jamais soumettre une cartouche d'encre à des chocs. Ne jamais tenter d'ouvrir une cartouche d'encre.
De l'encre pourrait s'échapper.

⚠ En cas d'ingestion ou de trouble physique

- ○ En cas de contact avec les yeux : rincer immédiatement et abondamment à l'eau courante pendant au moins 15 minutes. Si les yeux sont toujours irrités, consulter un médecin.
- ○ En cas de contact avec la peau : laver immédiatement à l'eau et au savon. En cas d’irritation ou d’inflammation de la peau : consulter un médecin.
- ○ En cas d'ingestion : ne pas provoquer le vomissement et demander immédiatement l'aide d'un médecin. Provoquer le vomissement peut créer un risque de suffocation.
- ○ Si l'odeur cause un trouble physique, amener la personne dans un endroit bien aéré et la faire se reposer. Si l'étourdissement ou la nausée persistent, consulter un médecin.

⚠ Le poids de cet appareil est de 210 kg (463 lb.) Le poids du support est de 20 kg (44 lb.)

⚠ ATTENTION

Installer l'appareil à un endroit stable et plat et capable de supporter son poids.
Le poids total de l'appareil peut être d'au moins 210 kg (463 lb.). Installer l'appareil à un endroit inapproprié peut provoquer un accident grave comme le renversement, la chute ou l'écrasement.

Le déchargement et la mise en place doivent être faits par au moins six personnes.
Les tâches qui exigent un effort trop grand si elles sont exécutées par un petit nombre de personnes peuvent être cause de blessures. La chute d'articles très lourds peut aussi causer des blessures.

⚠ ATTENTION

S'assurer de verrouiller les roulettes de la base.
Si l'appareil devait commencer à basculer, il s'ensuivrait un accident grave, par exemple l'écrasement de membres ou du corps.

Prendre les mesures de sécurité adéquates pour l'entreposage des rouleaux de support pour s'assurer qu'ils ne rouleront pas, ne tomberont pas et ne se renverseront pas.
Il y a risque d'être écrasé par le support et de subir des blessures graves.

La manutention du support en rouleau doit être faite par deux personnes ou plus et il faut prendre des précautions pour éviter les chutes.
Tenter de soulever des objets trop lourds peut causer des blessures.

⚠ Cet appareil utilise des rayons ultraviolets.

⚠ PRUDENCE

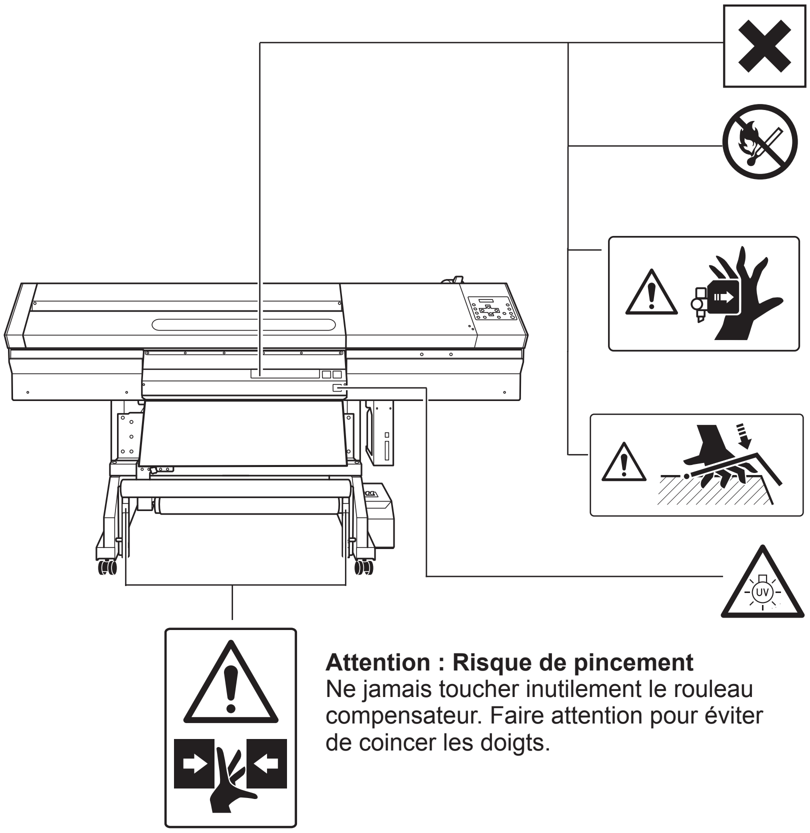
Ne jamais regarder pendant de longues périodes le rayonnement blanc bleuté (ultraviolet) émis par la tête d'impression.
Le fait de regarder directement et de près le rayonnement ultraviolet pendant une période prolongée peut causer des lésions oculaires.

⚠ Attention : Rayonnement ultraviolet

Cet appareil est muni de couvercles destinés à empêcher les fuites de rayonnement ultraviolet à faible niveau, mais sa manipulation ou son utilisation incorrectes peuvent causer des lésions dues au rayonnement ultraviolet. La gravité des lésions est fonction de l'intensité et de la longueur d'onde du rayonnement ultraviolet et de la durée de l'exposition. L'exposition prolongée à un fort rayonnement ultraviolet de longueur d'onde dangereuse peut causer des lésions oculaires ou cutanées. La prudence est de rigueur..

⚠ Vignettes d'avertissement

Des vignettes d'avertissement sont apposées pour qu'il soit facile de repérer les zones dangereuses. La signification des vignettes est donnée ci-dessous. Respecter les avertissements.
Ne jamais retirer les vignettes et ne pas les laisser s'encrasser.



Inflammable
L'encre et les liquides usés sont inflammables. Les garder loin de toute flamme nue.

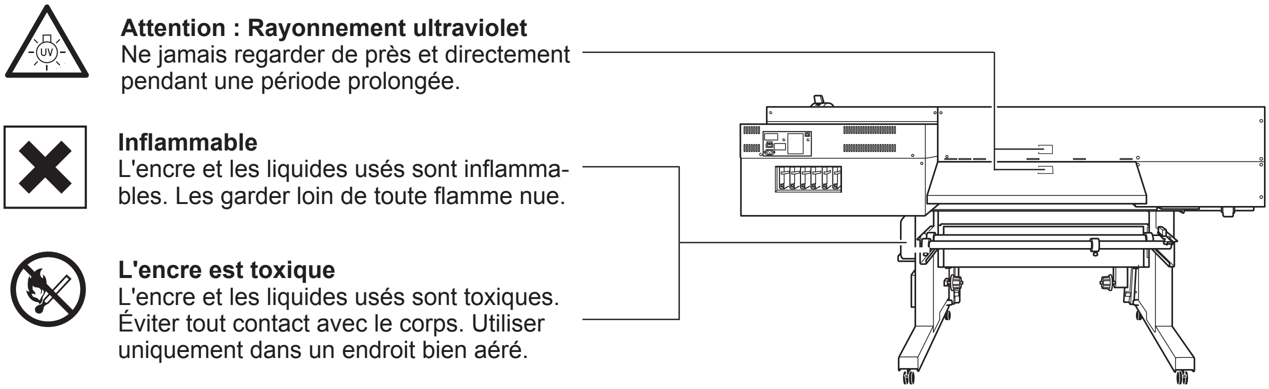
L'encre est toxique
L'encre et les liquides usés sont toxiques. Éviter tout contact avec le corps. Utiliser uniquement dans un endroit bien aéré.

Attention : Têtes d'impression mobiles
Les têtes d'impression sous le couvercle se déplacent à haute vitesse et représentent un danger. Ne jamais insérer la main ou les doigts dans l'ouverture.

Attention : Risque de pincement
Faire attention de ne pas coincer les doigts pendant le chargement du support ou lors de la fermeture du couvercle.

Attention : Rayonnement ultraviolet
Ne jamais regarder de près et directement pendant une période prolongée.

Attention : Risque de pincement
Ne jamais toucher inutilement le rouleau compensateur. Faire attention pour éviter de coincer les doigts.



Attention : Rayonnement ultraviolet
Ne jamais regarder de près et directement pendant une période prolongée.

Inflammable
L'encre et les liquides usés sont inflammables. Les garder loin de toute flamme nue.

L'encre est toxique
L'encre et les liquides usés sont toxiques. Éviter tout contact avec le corps. Utiliser uniquement dans un endroit bien aéré.

Important Notes on Handling and Use

This machine is a precision device. To ensure the full performance of this machine, be sure to observe the following important points. Failure to observe them may not only result in loss of performance, but may also cause malfunction or breakdown.

Printer Unit

This machine is a precision device.

○ Handle carefully, and never subject the machine to impact or excessive force.
○ Never needlessly put your hand or fingers inside the cover, the ink-cartridge ports, or other internal areas of the machine.

Install in a suitable location.

○ Install in a location having the specified temperature and relative humidity.
○ Install in a quiet, stable location offering good operating conditions.

The printing heads and the UV emitter are delicate devices.

○ Never needlessly touch or allow media to scrape them. Failure to handle with care may cause damage.
○ The print heads may be damaged if allowed to dry out. The machine prevents desiccation automatically, but improper operation may render this feature inoperative. Operate properly, as specified in this manual.
○ Never allow the machine to stand with an ink cartridge removed. Remaining ink in the printer may harden and clog the print heads.
○ The print heads are components that wear out. Periodic replacement is required, with the frequency of replacement depending on use.

Ink Cartridges

Ink cartridges come in various types.

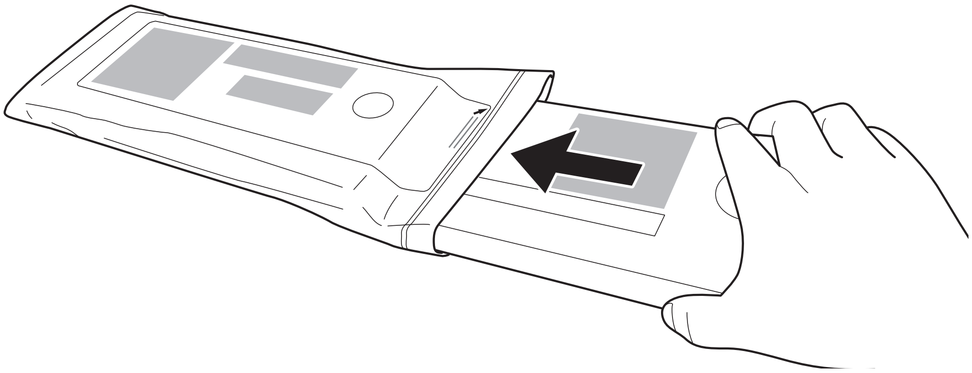
○ Use a type that is compatible with the printer. Also, be sure to use only genuine items from Roland DG Corp.

Never subject to impact or attempt to disassemble.

○ Never drop or shake forcefully. The impact may rupture the internal pouch and cause the ink to leak.
○ Never attempt to disassemble.
○ Never attempt to refill the ink.
○ If ink gets on your hands or clothing, wash it off as soon as possible. Removal may become difficult if allowed to stand.

Storage

○ Store in a location out of direct sunlight.
○ Store unopened in a well-ventilated location at a temperature of 5 to 40˚C (41 to 104˚F) and a relative humidity of 20 to 80%.
○ After opening, be sure to store sealed in the original bag. Otherwise the ink may harden and become unusable.



Chapter 1
Introduction

1-1 Features

Features of the Machine

What's the LEC-330?

The LEC-330 is a printer that performs high-quality printing using ultraviolet (UV) inks and is equipped with a cutting feature. Not only can you use the unit as either a printer or a cutting machine, but you can also perform printing followed immediately by cutting. Also, using the crop-mark feature lets you detach the media after printing, then load it again and position it accurately for cutting. This makes possible a wide range of uses, including small batches of labels, decals, cut-out text, and signmaking.

Built-in Print Server

This machine has a built-in print server as a network interface. When you use the print server, you can send printing data to the machine from anywhere on the network.

Includes a Media Take-up System

To accommodate printing of lengthy media, the machine includes a media take-up system. This is capable of taking up media automatically during printing. This makes possible unattended operation at night and efficient printing of lengthy media.

Includes a Software Raster Image Processor (RIP)

The software RIP included with the machine lets you use your computer to perform raster image processing for printing data such as PostScript files exported from a program, and output the data to the machine.

Features of ECO-UV inks

The LEC-330 uses ECO-UV inks. ECO-UV inks are fixed to the media instantly by ultraviolet light. This makes it possible to perform printing on media that is difficult to print using conventional inks. ECO-UV inks are available in a line-up of six colors (cyan, magenta, yellow, black, white, and gloss).

Other User's Manuals

In addition to this manual, be sure to read the following documents as well.

(1) LEC-300 Setup Guide

Be sure to read this first. This describes setup, important conditions about the installation location, and other information for enabling use of this machine.

(2) Roland VersaWorks Quick Start Guide

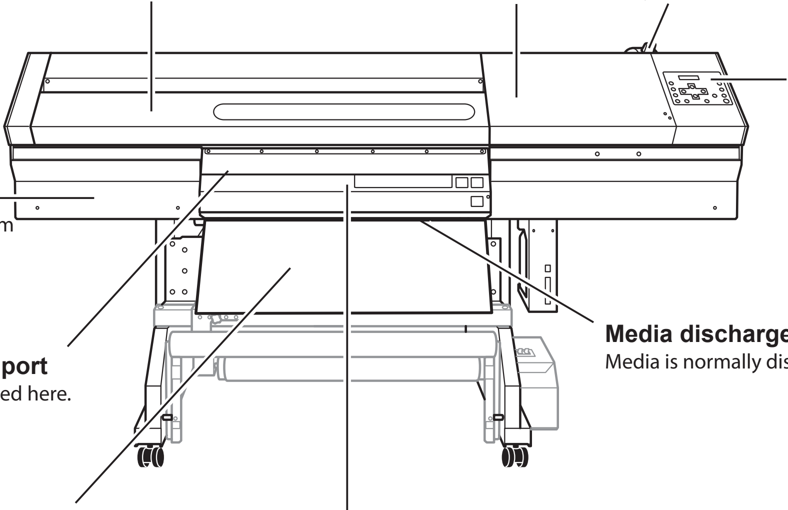
This describes the installation, setup, and basic operation for Roland VersaWorks, the included software raster image processor (RIP).

(3) White and Gloss Ink Guide

Read this after reading (2). It describes the special methods of creating printing data and performing printing when using white ink or gloss ink.

1-2 Part Names and Functions

Printer Unit



Front cover
Be sure to close this when you perform printing.

Side cover
You remove this when you perform maintenance.

Loading lever
You operate this when you load media.

Operation panel
You use this to perform various operations.
☞ P. 25, "Operation Panel"

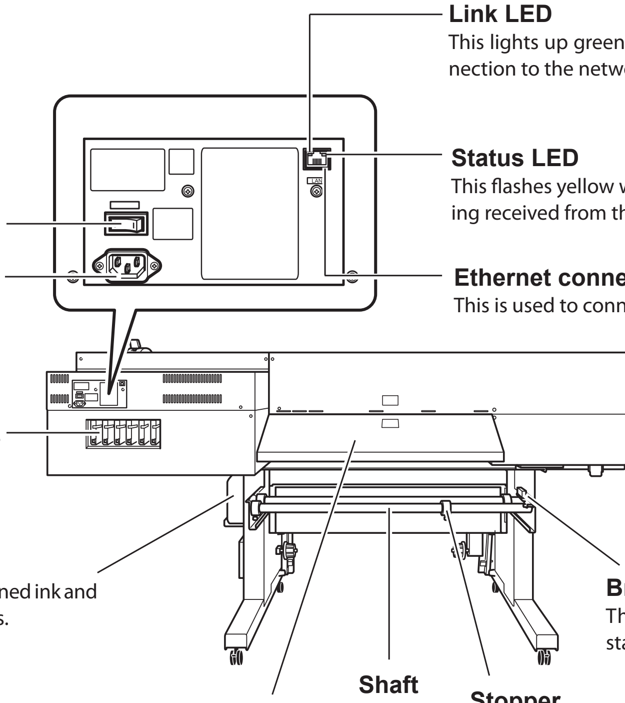
Maintenance cover
You remove this when you perform cleaning of the print heads.

Media discharge port
Media is normally discharged here.

Media discharge port
Stiff media is discharged here.

Media guide
This prevents the end of the media from striking the stays or other areas, which can cause the media to come loose.

Air-intake port
This is where air intake is performed to lessen the characteristic odor of ECO-UV inks. A deodorizer must be provided separately.
☞ "Setup guide"



Link LED
This lights up green when the connection to the network is correct.

Status LED
This flashes yellow while data is being received from the network.

Main power switch

Power-cord connector
This supplies power to the printer.

Ethernet connector
This is used to connect the printer to a network.

Cartridge slots
There are where ink cartridges are installed.

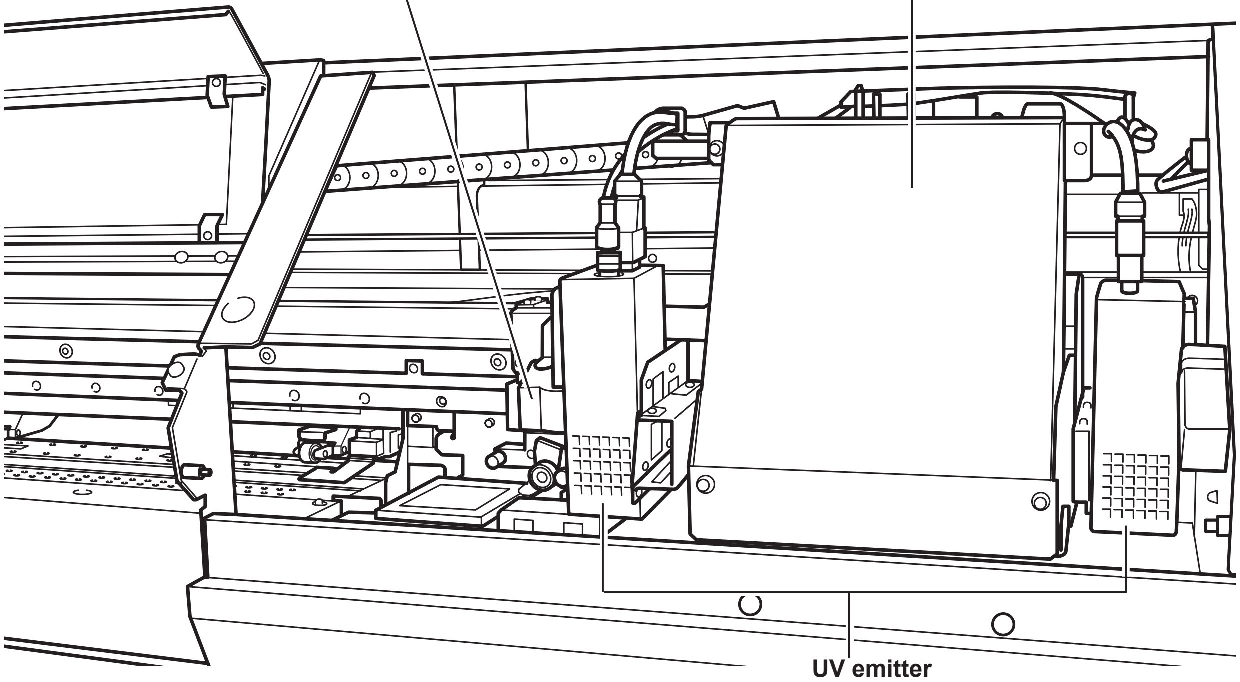
Drain bottle
This collects drained ink and other such fluids.

Brake
This helps to ensure stable media feed.

Shaft

Stopper

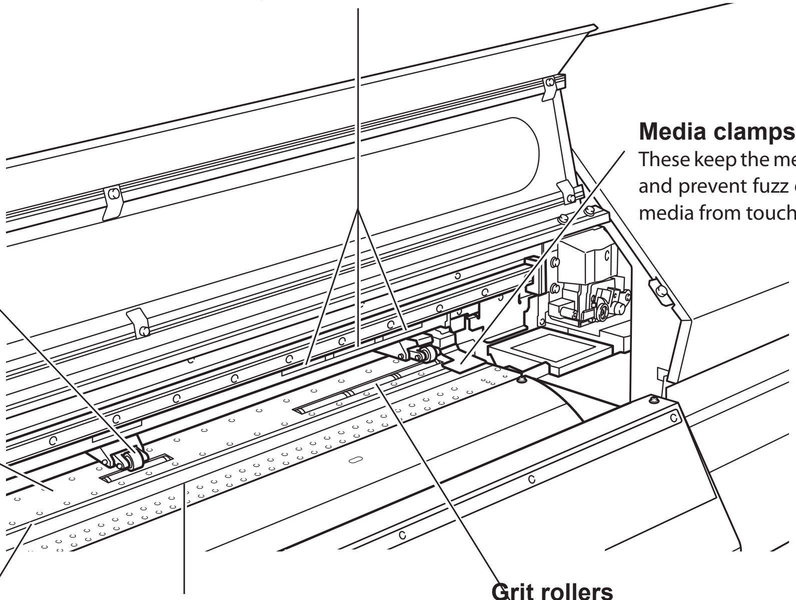
Rear cover
Be sure to install this when performing printing.



Cutting carriage
The blade and the separating knife are inside here.

Print-head carriage
The print heads are inside this.

UV emitter
This is the ultraviolet (UV) LED. It emits light only during printing.



Grit patterns
These indicate the locations of the grit rollers. The pinch rollers must always be placed within the area indicated by each of these patterns.

Media clamps
These keep the media from coming loose and prevent fuzz on the cut edge of the media from touching the print heads.

Pinch rollers
These clamp the media when the loading lever is pulled back toward you.

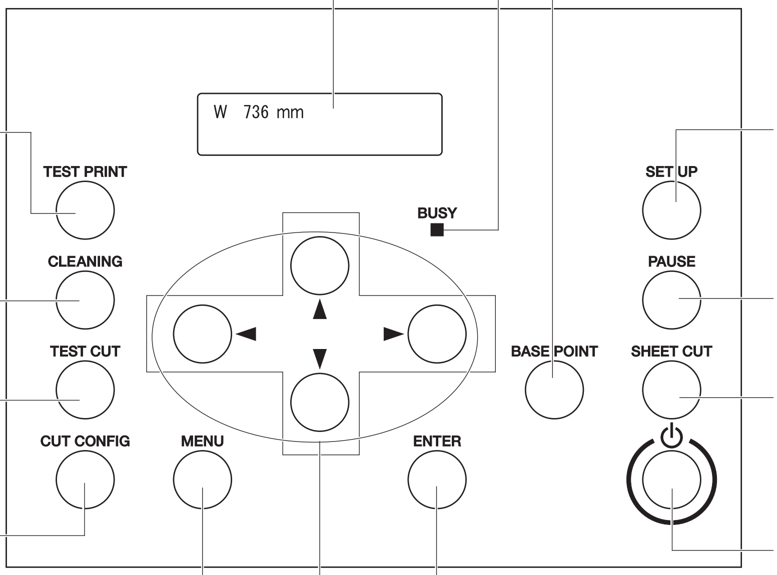
Platen
This is the path over which the media passes. A suction fan that keeps the media from coming loose are built in.

Blade protection
This protects the tip of the blade during cutting.

Knife guide
The separating knife passes through this when you perform media cutoff.

Grit rollers
These rollers move the media forward and backward.

Operation Panel



Display screen
This displays various setting menus and other information.

BUSY light
This lights up during printing and other such operations.

BASE POINT key
You use this when you want to set the print-start location. This lights up when the setting has been made.

SETUP key
You press this when you load media. This lights up when media is loaded and the machine is ready to perform printing.

PAUSE key
This pauses printing.

SHEET CUT key
Holding this down for one second or longer cuts off media.

Sub power switch
This switches the printer on and off. (To switch the printer off, you hold down the switch for one second or longer.) This flashes slowly when the machine is in the sleep mode.

TEST PRINT key
Holding this down for one second or longer performs a printing test.

CLEANING key
You use this to perform cleaning of the print heads.

TEST CUT key
Holding this down for one second or longer performs a cutting test.

CUT CONFIG key
This displays the menu for setting the conditions for cutting.

MENU key
You press this to enter the menus for various settings.

ENTER key
You use this for such tasks as enabling setting values.

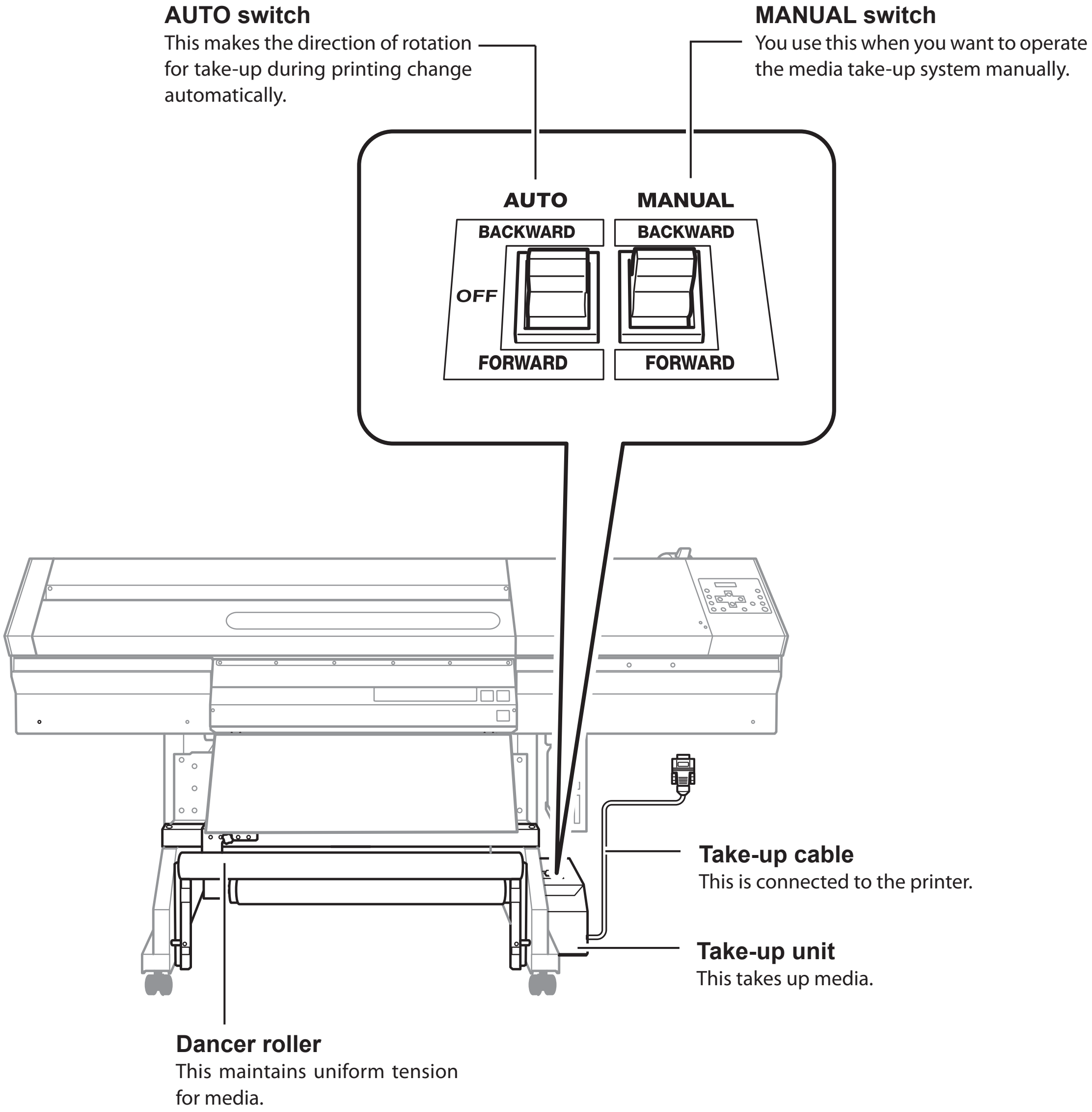
Cursor keys
You use these to select settings for menu items, to move the media, and for other such operations.

Panel Notation

In this document, the keys and lights on the operation panel are indicated by the following images.

MENU	MENU key
SET UP	SETUP key
ENTER	ENTER key
◄ ► ▲ ▼	Cursor keys
PAUSE	PAUSE key
CLEANING	CLEANING key
TEST PRINT	TEST PRINT key
TEST CUT	TEST CUT key
BASE POINT	BASE POINT key
CUT CONFIG	CUT CONFIG key
SHEET CUT	SHEET CUT key

Media Take-up System


AUTO
MANUAL
BACKWARD
BACKWARD
OFF
FORWARD
FORWARD

AUTO switch
This makes the direction of rotation for take-up during printing change automatically.

MANUAL switch
You use this when you want to operate the media take-up system manually.

Take-up cable
This is connected to the printer.

Take-up unit
This takes up media.

Dancer roller
This maintains uniform tension for media.

Chapter 2
Basic Operation

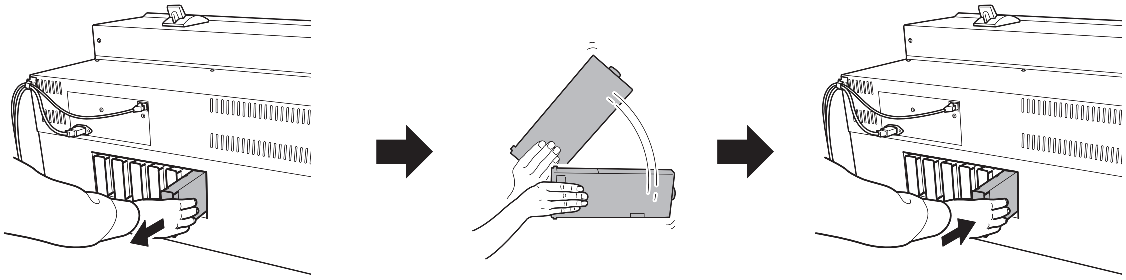
2-1 Before Starting Operations

Before Starting the Day's Work

The ingredients in white ink tend to settle. Each day, before starting the day's operations, be sure to carry out the following steps. Allowing the ink to stand without carrying out these steps can cause the settled material to harden, resulting in malfunction or other problems.

○ Remove just the white ink cartridges, shake them gently, then reinsert them.

○ The cyan, magenta, yellow, black, and gloss ink cartridges do not need to be shaken every day, but new cartridges for these colors should be shaken when you install them.



Automatic Maintenance Feature

This machine is provided with a feature that automatically performs maintenance on a periodic basis. Because this performs operations that are intended to keep the print heads from drying out, be sure to observe the following matters.

○ Leave the main power on at all times.

○ Never leave the front cover open for long periods.

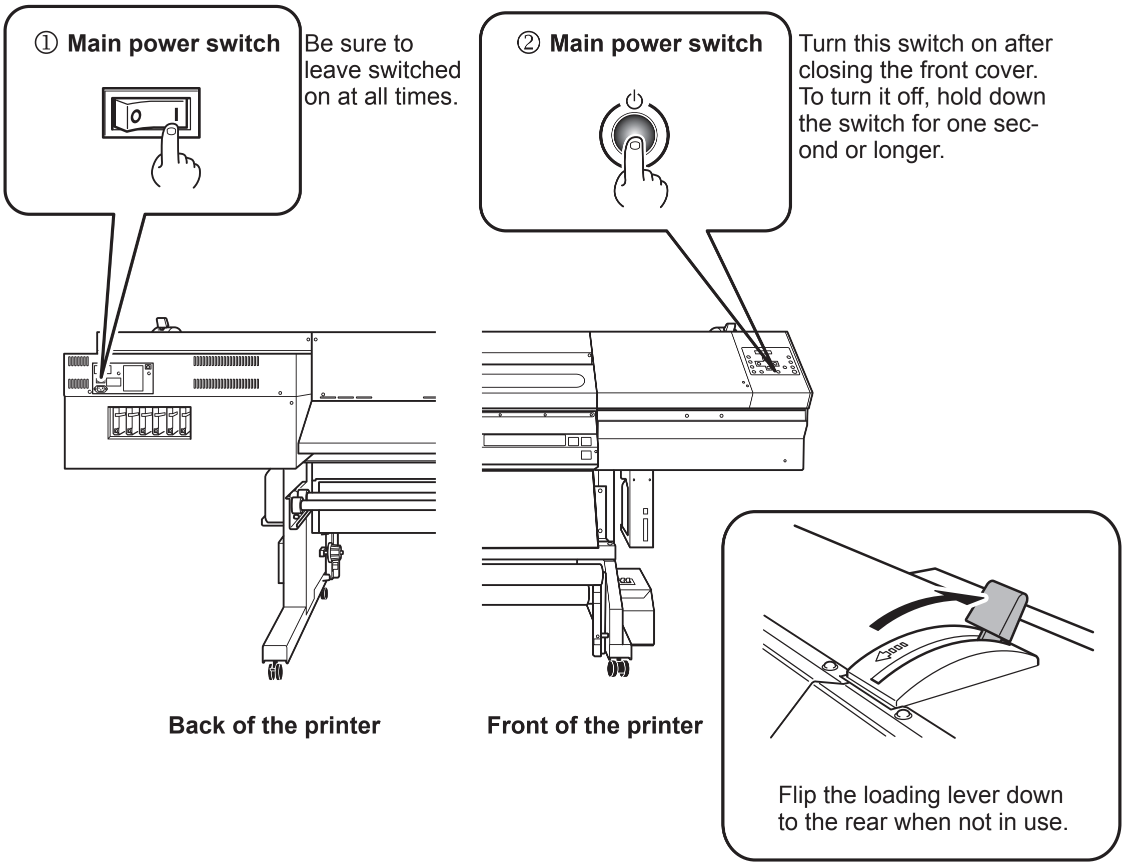
○ After finishing making the settings for the various menu items, go back to the top screen.

2-2 Switching the Power On and Off

Switching the Power On and Off

This machine has a main power switch and a sub power switch. Switch on both to use the machine.
Whenever printing is finished, switch off the sub power. You also flip down the loading lever to the rear of the machine.
Leave the main power switch ① on at all times, never switching it off. Leaving it on activates the alarm feature.

☞ P. 72, "Alarm Feature"



① Main power switch

Be sure to leave switched on at all times.

② Main power switch

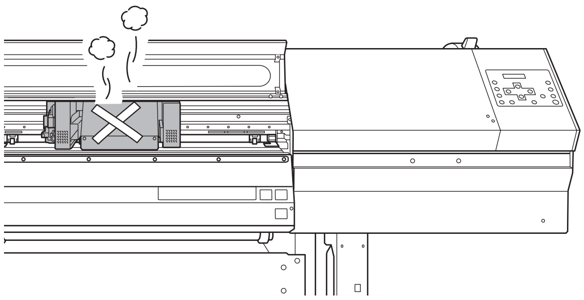
Turn this switch on after closing the front cover. To turn it off, hold down the switch for one second or longer.

Back of the printer

Front of the printer

Flip the loading lever down to the rear when not in use.

Important Note on Switching Off the Power
Never switch off the main power or unplug the power cord suddenly while operation is in progress. Doing so may damage the print heads. Be sure to first switch off the sub power.
If the main power is accidentally switched off, immediately turn the power back on.



The Power-saving Feature

This machine is provided with a power-saving feature that switches to a low-power "sleep mode" when a fixed interval passes with no operation. The factory default for the time after which the machine switches to the sleep mode is 30 minutes.
You can change the setting for the time of the shift to the sleep mode. You can also switch off the power-saving feature.

☞ P. 86, "Setting the Interval until Activation of the Sleep Mode," p.86, "Deactivating the Sleep Mode"

When the machine is in the sleep mode, the sub power switch flashes slowly. Using the operation panel or performing operations such as sending printing data from the computer (when media is loaded) restores the machine to its normal mode.

To reduce power consumption, we recommend leaving the power-saving feature on and setting the activation time for the sleep mode to 30 minutes or less.

2-3 Loading and Cutting Off Media

Loading Media

Media may be of one of two types: media wound onto a paper tube (called "roll media") and media not rolled in this way (called "sheet media"). This section explains how to load media, using roll media as an example. For information on how to load sheet media, refer to the page indicated below.

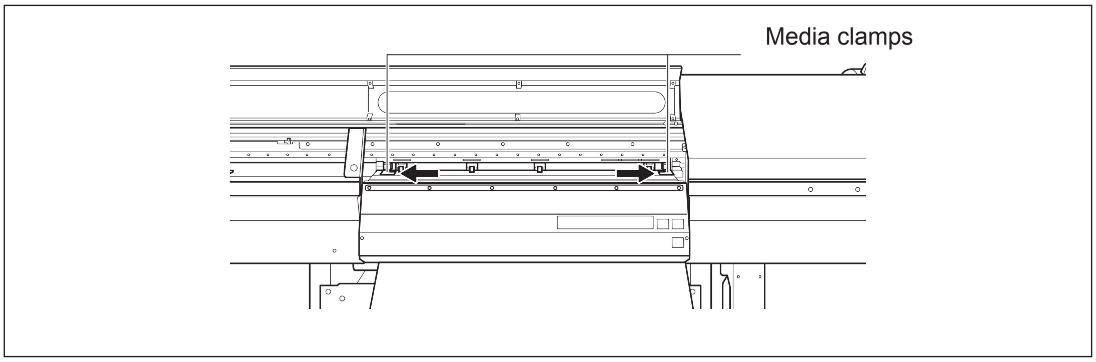
☞ P. 82 "How to Load Sheet Media"

⚠ **CAUTION**	**Load roll media correctly.** Otherwise the media may fall and cause injury.
⚠ **CAUTION**	**Roll media weighs about 20 kg (44 lb.). Handling roll media is an operation that must be performed by two persons or more, and care must be taken to prevent falls.** Attempting to lift heavy media in a manner that taxes your strength may cause physical injury. Also, if dropped, such items may cause injury.
⚠ **CAUTION**	**Never load media that weighs more than 20 kg (44 lb.) .** The machine may fail to withstand the weight and tip over or cause the media to fall.
⚠ **CAUTION**	**When performing printing, be sure to attach the rear cover.** When the rear cover is not installed, ultraviolet light can escape from the machine more easily.

1. Pass the media through the machine and position it correctly on the left and right.

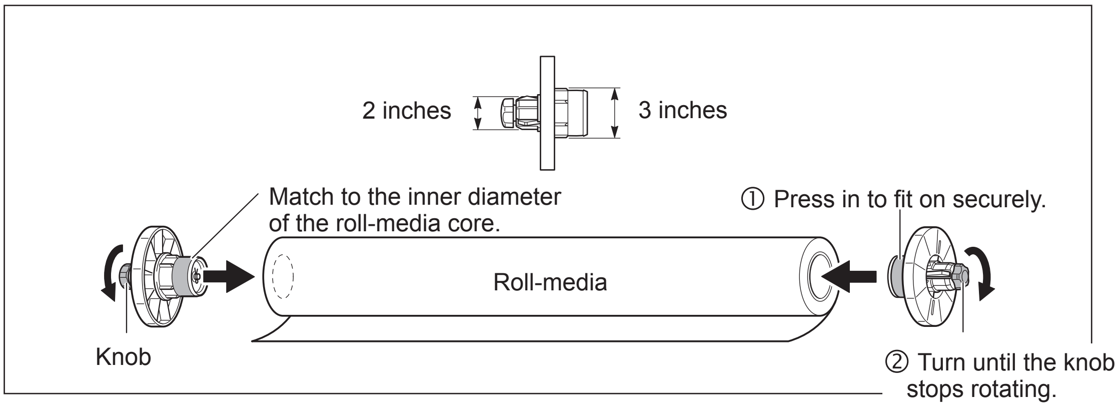
❶ Open the front cover.

Move the media clamps to the sides.

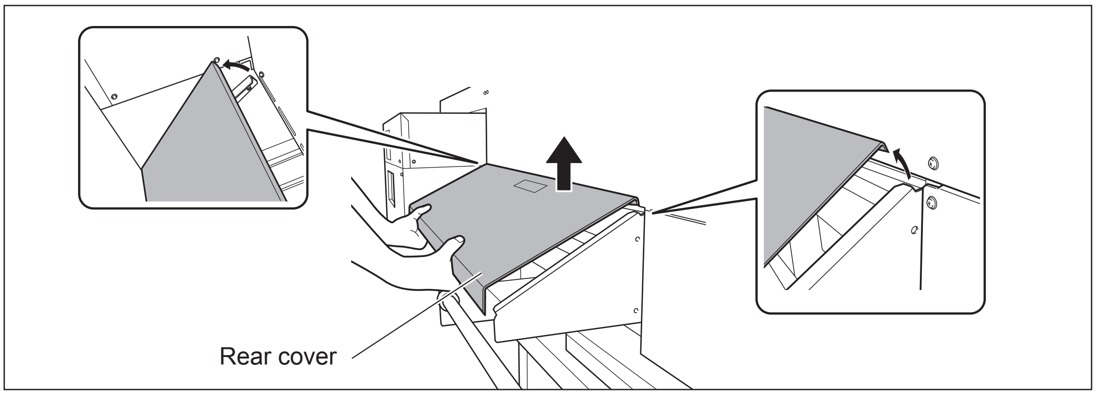

Media clamps

❷ Attach the media flanges to the roll media.

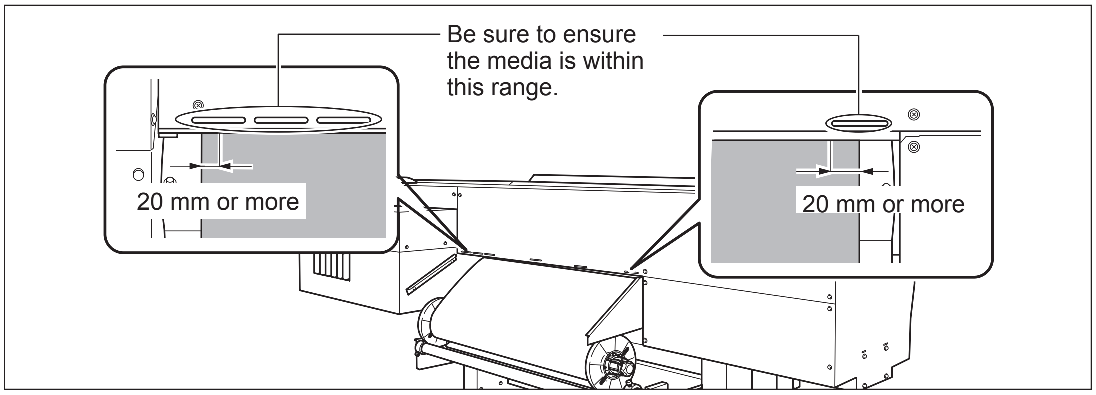
If the inner diameter of the roll-media core measures 3 inches, fit the media flanges onto the core, then turn each knob clockwise all the way to keep the media flanges from falling out.


2 inches
3 inches
Match to the inner diameter of the roll-media core.
① Press in to fit on securely.
Roll-media
Knob
② Turn until the knob stops rotating.

❸ Detach the rear cover.

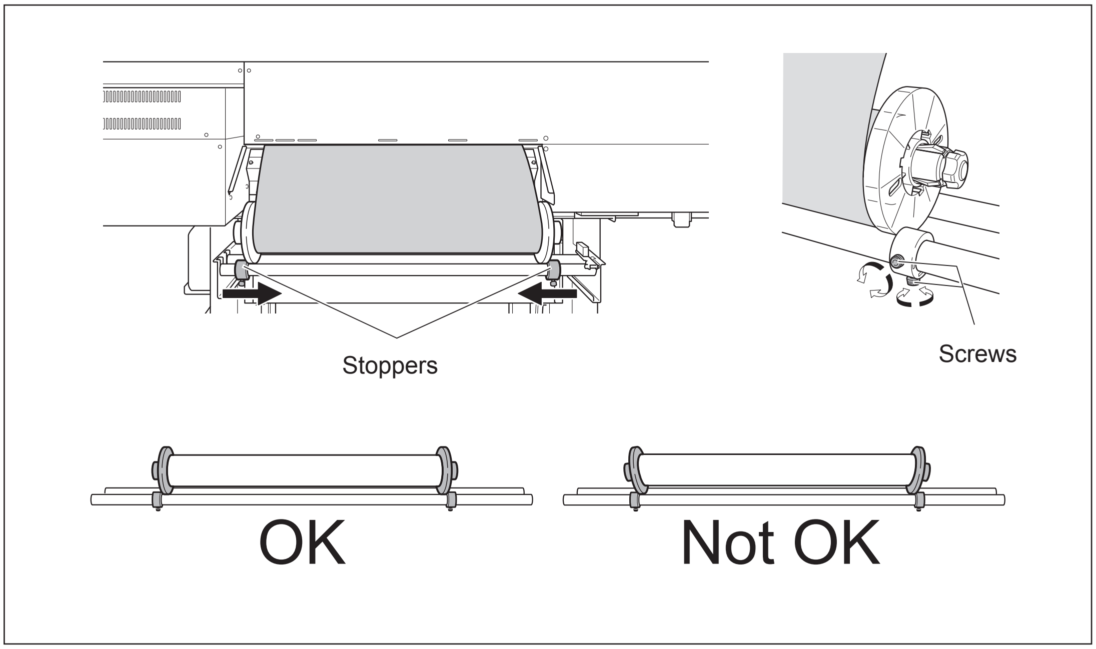


❹ Place the roll media on the shafts and position its left and right edges to match the grit patterns.

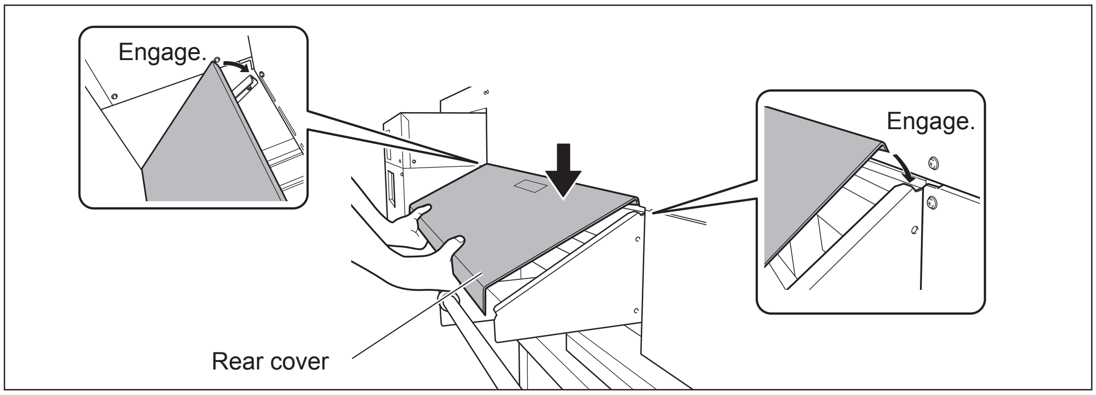

Be sure to ensure the media is within this range.
20 mm or more
20 mm or more

❺ Secure the stoppers in place in alignment with the width of the media.

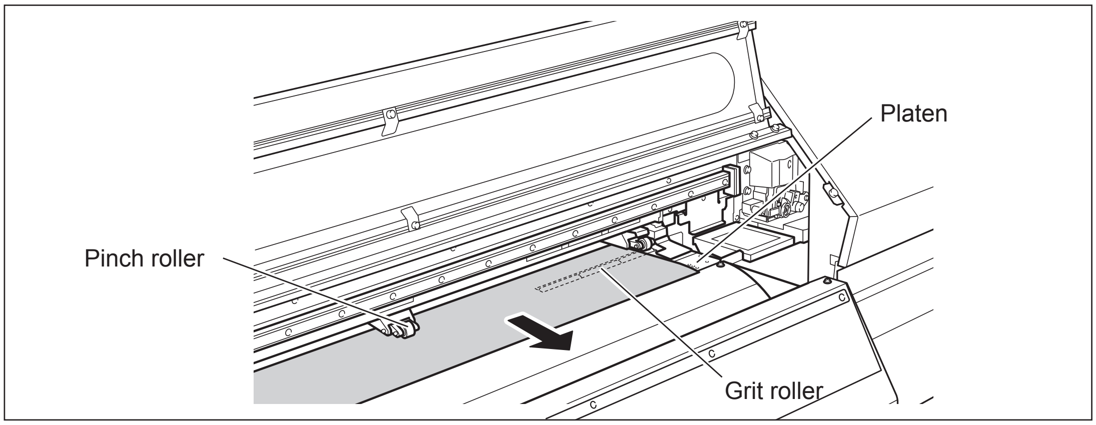
Make sure the media flanges are straight. Correct media feed is impossible if either of the media flanges is at an angle.


Stoppers
Screws
OK
Not OK

❻ Attach the rear cover.


Engage.
Engage.
Rear cover

❼ Pass the leading edge of the media between the grit rollers and the pinch rollers, and feed it out as far as the platen.


Platen
Pinch roller
Grit roller

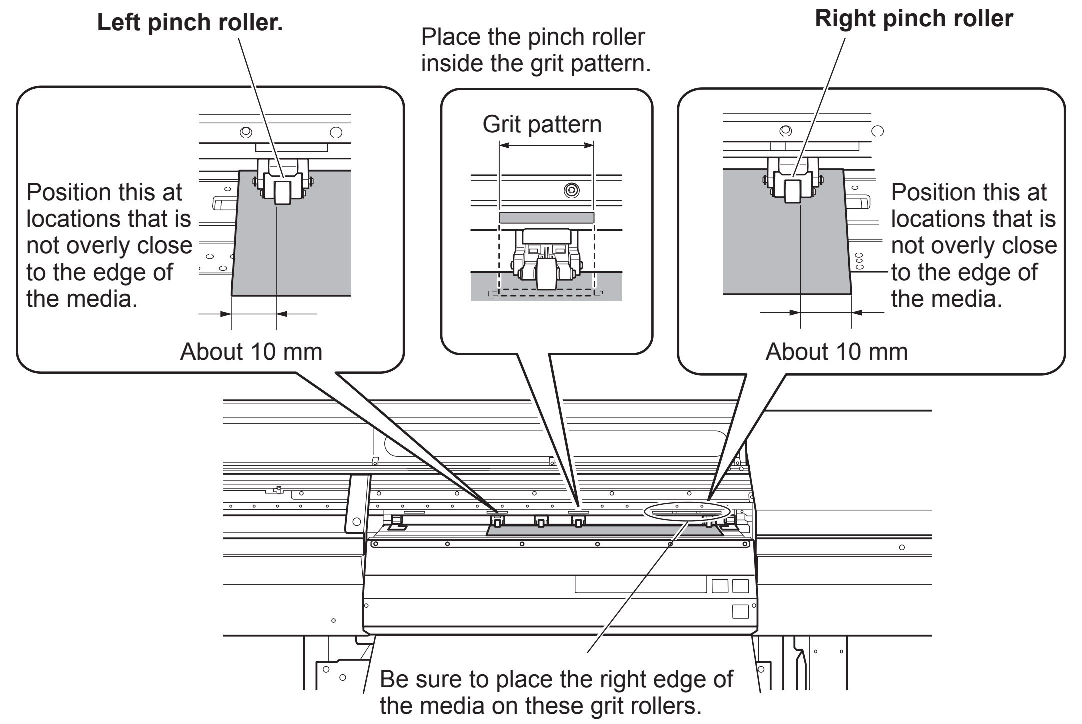
❽ Make sure both edges of the media are above the grit rollers, then place pinch rollers over all grit rollers covered by the media.

Placing the pinch rollers inside each of the grit patterns ensures that they are positioned above the grit rollers.

Be sure to place the left and right pinch rollers at the edges of the media. The middle pinch rollers cannot be lowered at any position other than above the grit rollers.

When positioning the middle pinch rollers, choose locations where they are as equally spaced as possible above the grit roller that lie inside the left and right pinch rollers.

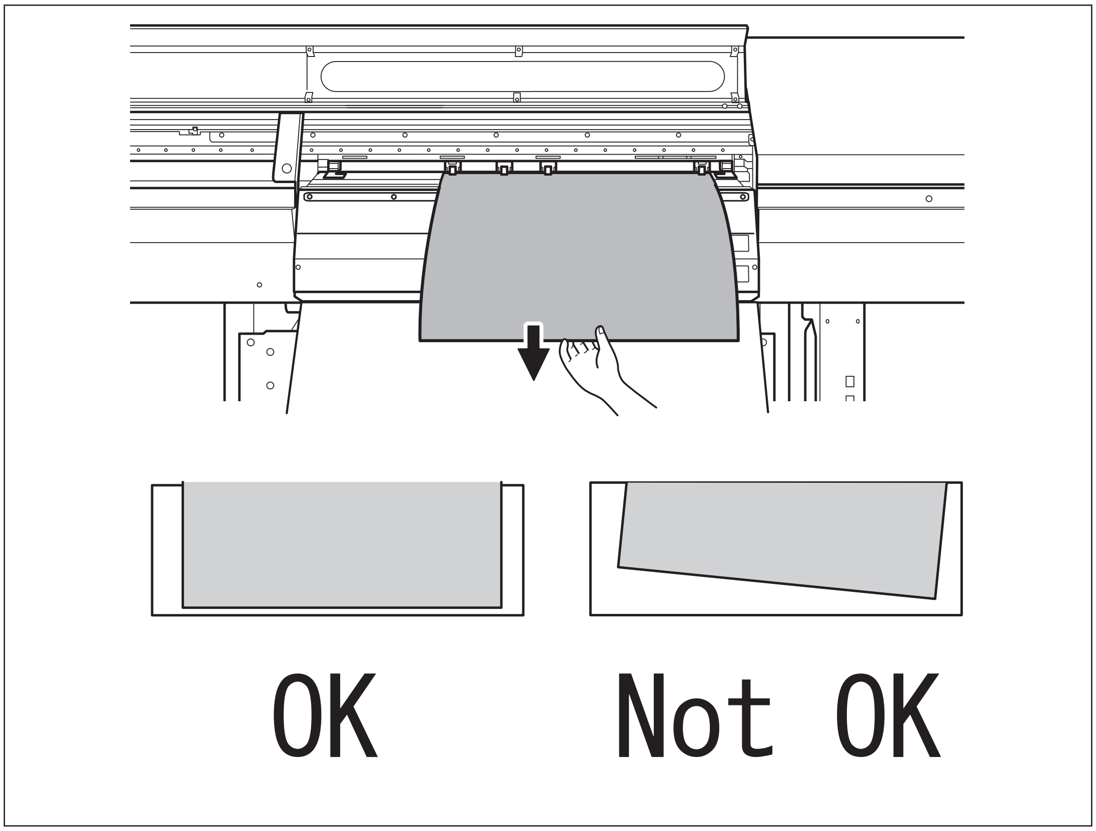
☞ P. 108, "Gloss Ink Features and Printing Methods"


Left pinch roller.
Place the pinch roller inside the grit pattern.
Right pinch roller
Position this at locations that is not overly close to the edge of the media.
Grit pattern
Position this at locations that is not overly close to the edge of the media.
About 10 mm
About 10 mm
Be sure to place the right edge of the media on these grit rollers.

2. Secure the media in place so that it is without slack.

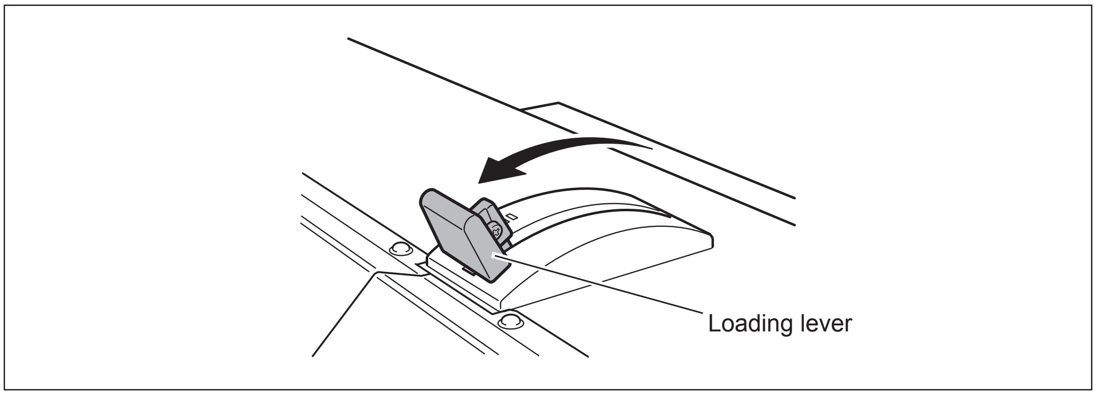
➊ Hold the media at the center and pull it out, being sure to keep it straight.

Make sure all areas of the media are taut.



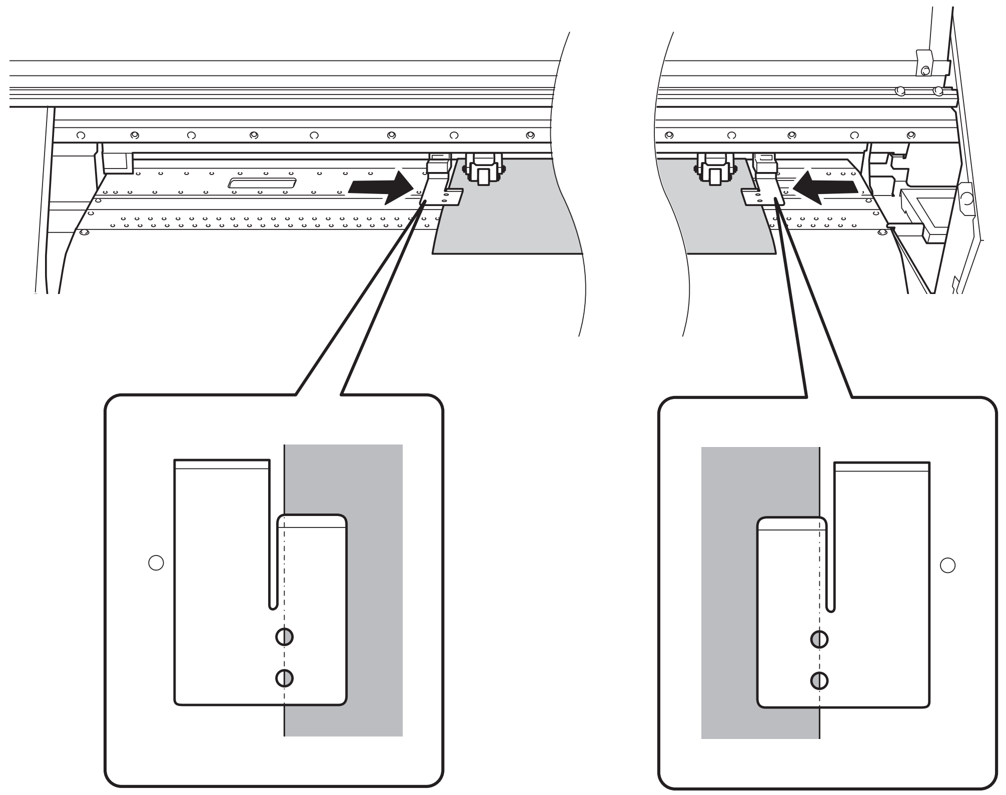
➋ Pull back the loading lever.

The media is secured in place.



3. Clamp the edges of the media with the media clamp.

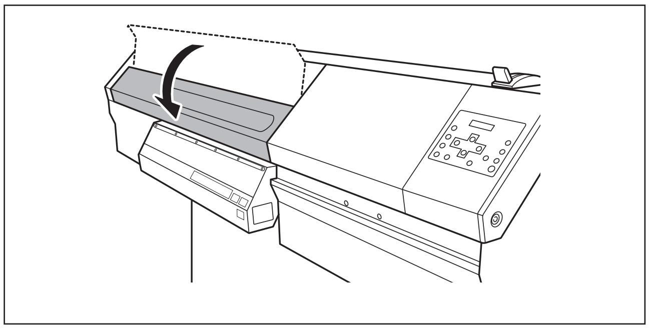
❶ Move the media clamps as shown in the figure below.



Left media clamps
Line up the edge of the media with the centers of the holes.

Right media clamps
Line up the edge of the media with the centers of the holes.

❷ Close the front cover.



❸

```
SETUP SHEET
          L 25.0 m
```

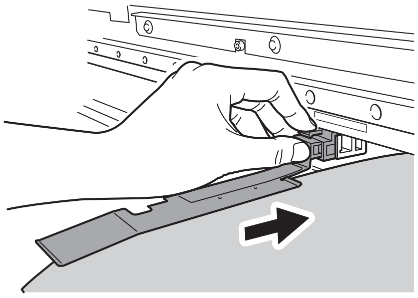
Use ◄ ► to select "ROLL."
Press ENTER.

❹ Press SET UP.

Important Note When Using the Media Clamps

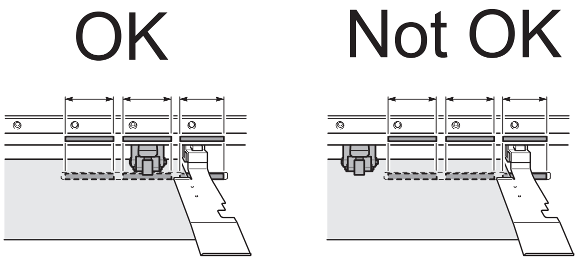
○ Insert the media clamps firmly all the way until they engage with an audible click, and make sure they will not come loose. Incorrect mounting may cause the media to catch or snag and make correct printing impossible, or may lead to malfunction or poor printing quality.

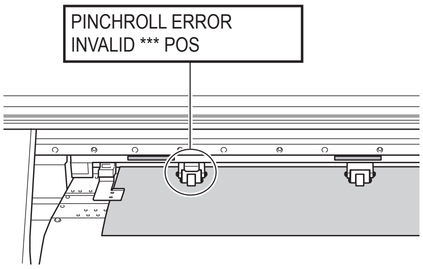
○ As printing proceeds, the media may move to the left or right and touch or come loose from the media clamps. After about 1 m (3 ft.) of media has been fed, check the positioning of the media clamps. If the media looks like it may come loose from the media clamps, adjust the positioning of the media clamps.



Position the pinch rollers over the grit rollers.

If the message shown in the figure appears when you close the front cover, check the positions of the pinch rollers and the middle pinch rollers. These must be placed over the grit rollers. Also, if the number of middle pinch rollers installed is greater than the number of grit rollers used, then detach the extra middle pinch rollers.





```
PINCHROLL ERROR
INVALID *** POS
```

Remove when not using roll media.

If roll media is allowed to stand unused in a loaded state for an extended period, the media may sag. This can cause poor printing quality and motor errors, so be sure to remove and store such media when not in use.

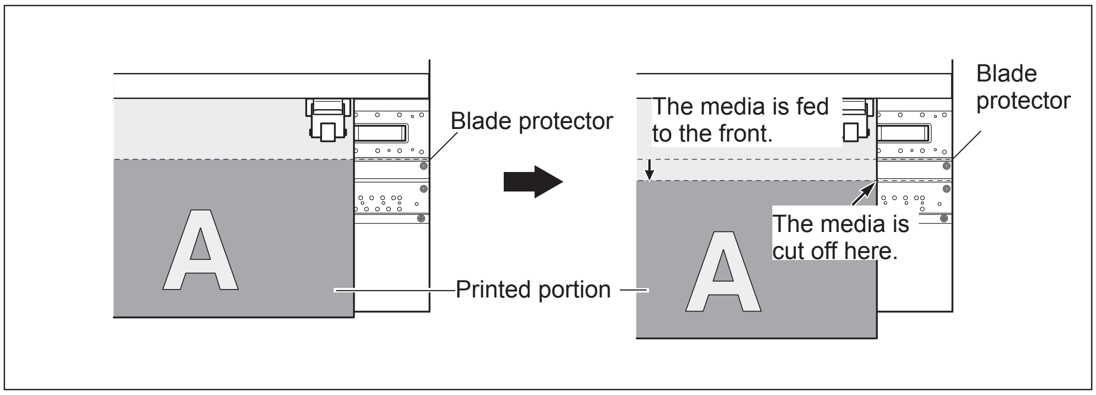
Cutting Off the Media

Some media may be thick or may be composed of plastic or other hard material. For such media, never perform cutoff using (SHEET CUT). Doing so may cause malfunction or other problems.

Procedure

❶ Close the front cover.
Make sure (SET UP) lights up.

❷ Hold down (SHEET CUT) for one second or longer
The media is cut off.The cutoff location on the media is as shown in the figure below.



You can make the setting in the software RIP for automatic media cutoff after printing or cutting has finished. For information on how to make the setting, refer to the documentation for the software RIP you're using.

Important Notes on Using the Long Media Clamps

When you're using the long media clamps, be sure to set the [MEDIA CLAMP] menu item to [LONG] to disable media cutoff. Performing cutting the media when the long media clamps are installed causes interference with the separating knife, which may result in malfunction or damage to the machine.
If you want to separate the media after printing has finished, be sure to first detach the long media clamps, then set the [MEDIA CLAMP] menu item to a setting other than [LONG].

☞ P. 80, "Printing Media That Warps Easily"

Give Attention to Media Composition

○ For some types of media, cutoff is not possible.
○ Some types of media may remain on the platen after cutoff. If the media remains on the platen, remove it by hand.
○ When you cut off media while using the short media clamps, then depending on the media, it may come loose from the media clamps. After you cut off the media, check to make sure that the media has not come loose from the media clamps.

Before you're performing cutoff, never use (▲) to pull the media back.

Unless the end of the media has been pulled out to a location to the front of the platen, cutoff may not be performed smoothly.

2-4 Starting Printing

Getting Ready to Receive Data from a Computer

When you have finished loading media, then follow the steps below. This procedure enables the machine to receive data from the computer and perform output. When printing data that includes cutting paths is received, you can also carry out cutting immediately after performing printing.

Note, however, that when you want to perform only cutting, operation that differs from the following procedure is required.

☞ P. 44, "To Perform Cutting"

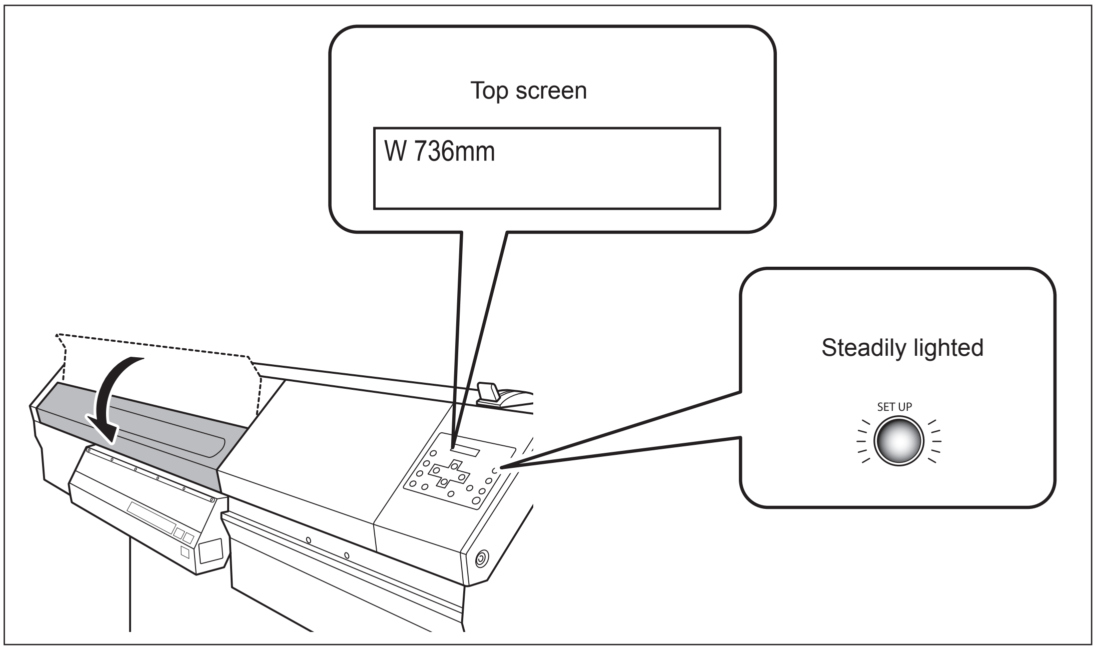
Procedure

❶ Close the front cover.

❷ Make sure (SET UP) stays steadily lit.

❸ Make sure you are at the top menu.

If you are not at the top menu, press (MENU) then press (◄)



Printing Is Not Possible in These Situations

○ The machine does not run when the front cover is open. Also, never open it when printing is in progress. Doing so interrupts printing.

○ Data from the computer is not accepted when (SET UP) is dark.

○ Data from the computer is not accepted when you are not at the top menu.

Points Which Must Be Observed

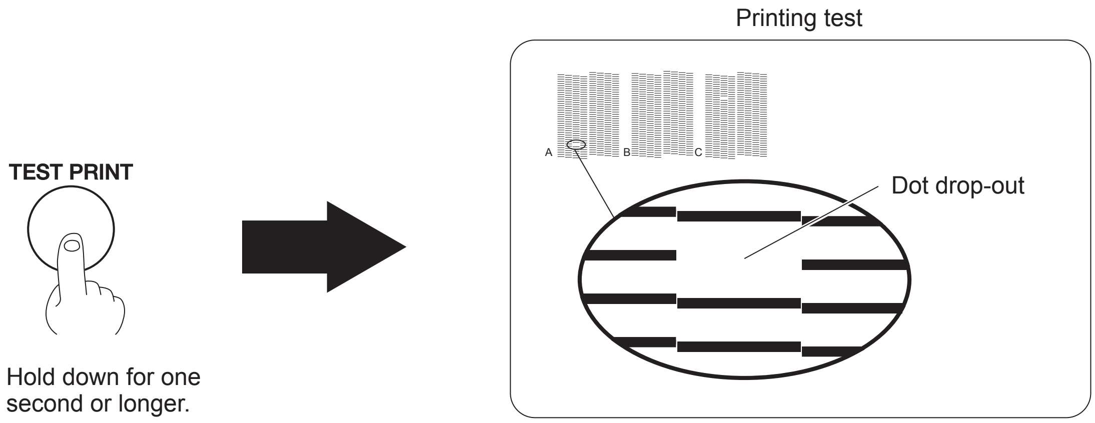
○ Be sure to set the media clamps during printing. Otherwise the edges of the media may warp and catch on the print heads.

○ During printing, never touch the media that's already been discharged. Doing so may obstruct media feed or cause the media to rub against the heads, which may result in a paper jam or damage to the heads.

Printing Tests and Cleaning

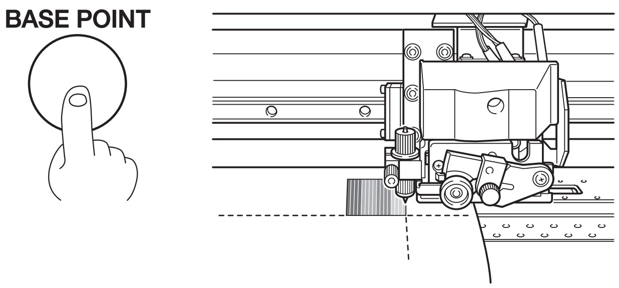
We recommend performing a printing test to check for problems such as dot drop-out before you carry out actual printing. If problems such as dot drop-out are found, clean the print heads.

How to Perform a Printing Test



Hold down for one second or longer.

Holding down (TEST PRINT) for one second or longer prints a test pattern.
You can print the test pattern where you want by using (◄) (►) (▼) to move the cutting carriage, then pressing (BASE POINT). The front cover may be left open during movement, but be sure to close it before you press (TEST PRINT).



How to Perform Cleaning

When a printing test reveals dot drop-out or the like, perform cleaning for just the group of heads that is incapable of correct printing. Compared with performing cleaning for all heads, this can reduce the amount of ink consumed.

Procedure

❶

```
CLEANING      ◄◆
NORMAL CL.     ►
```

Press (CLEANING).

❷

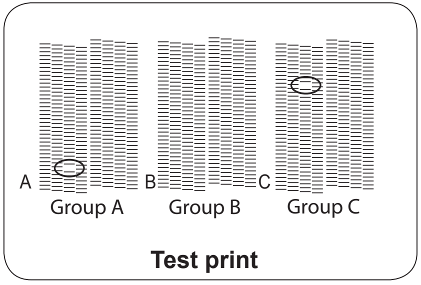
```
NORMAL CL.   ◄◆►
     A B C     ↵
```

Press (►).

③
```
NORMAL CL.       ◄▲▼►
    A _ C           ↵
```

Use ◄ ► to choose the group of heads that is not to be cleaned.
Use ▲ ▼ to get rid of the group display.
Repeat this procedure to display the groups of only the heads that require cleaning.

Of groups A through C, cleaning is performed only for the group displayed.



Test print

④
```
CLEANING...
>>
```
```
NORMAL CL.       ◄▲▼►
    A _ C           ↵
```

Press ENTER.
Cleaning starts.

When it finishes, the screen shown in the figure appears again.

⑤
```
W 736mm
  SETUP SHEET
  ◄► ROLL
```

Press MENU.
Press ◄ to go back to the original screen.

⑥ Perform a printing test again to make sure the dot drop-out has been corrected.

If the problem persists, try performing cleaning a second time.

If the problem doesn't go away even after performing cleaning two or three times, then try cleaning using a different method.

☞ P. 57, "When Head Cleaning Is Not Effective"

If the Printing-test Results Are Difficult to Interpret

Examine the results from different angles in a well-lighted location. Take advantage of reflected light to enable visual checking. We recommend performing the printing test on transparent or silver-colored media.

When you want to clean all heads simultaneously

Hold down CLEANING for one second or longer. Cleaning for all heads starts automatically.

2-5 If Ink Runs Out

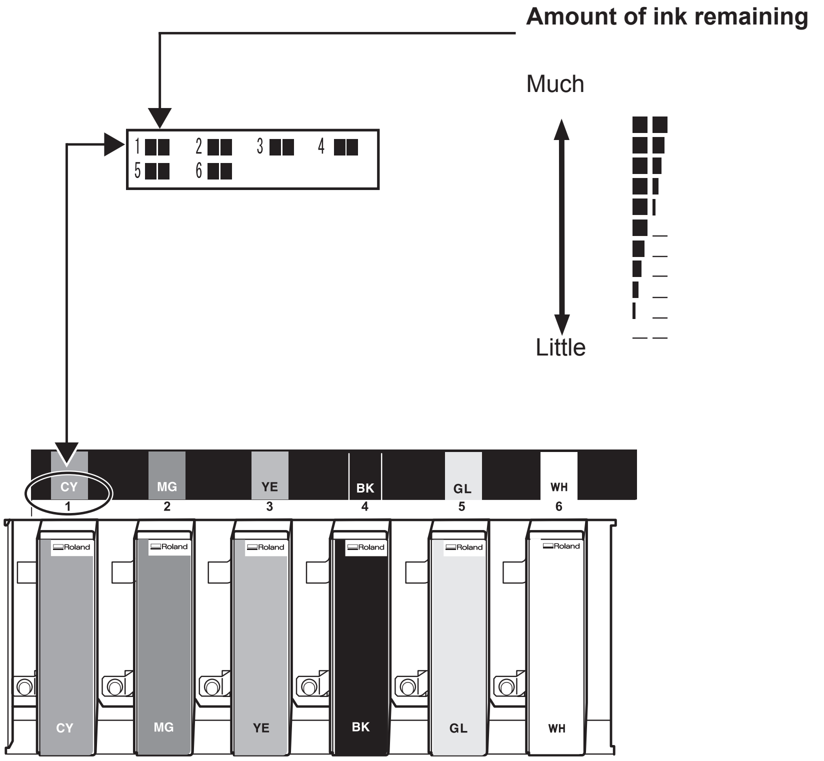
Checking for Remaining Ink

Procedure

❶
```
MENU           ◀▲▼
INK REMAINING    ▶
```
Press MENU.
Press ▲ several times.

❷
```
1██  2██  3██  4██
5██  6██
```
Press ►.

❸
```
W 736mm
  SETUP SHEET
  ◀▶ROLL
```
Press MENU.
Press ◄ to go back to the original screen.


Amount of ink remaining
Much
Little
1 2 3 4
5 6
CY MG YE BK GL WH
1 2 3 4 5 6
Roland
CY
MG
YE
BK
GL
WH

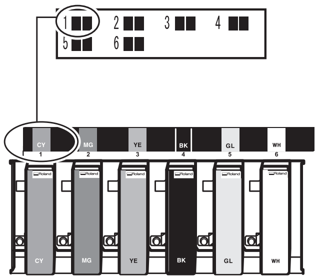
The display shows an approximate guide to the amount of remaining ink, which may differ somewhat from the actual amount remaining.

If Ink Runs Out

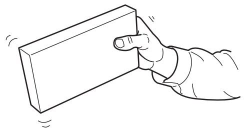
When ink runs out, a warning beep sounds and printing pauses (unless the default settings have been changed). Pull out the empty ink cartridge and insert a new one. Printing resumes.

Procedure

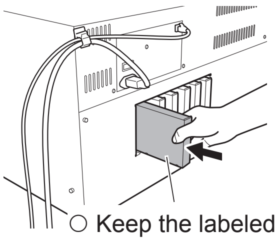
➊ The slot number for the empty cartridge flashes.



➋ Gently shake the new ink cartridge.

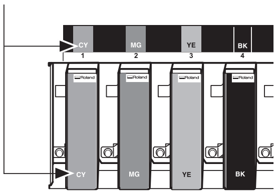


➌ Pull out the empty ink cartridge and immediately insert the new one.



○ Keep the labeled side face up.
○ Insert and remove slowly, one at a time.
○ Insert firmly, as far as it will go.

Replace with an item of identical type and color.



Important Notes on Replacing Cartridges

○ Be sure to replace with an item of identical type. Never mix items of different types.
○ Never allow the machine to stand with an ink cartridge removed. The print heads may become clogged.
○ Never insert or remove a partially used ink cartridge.
○ Never remove an ink cartridge suddenly while the printer is in operation.
○ When printing is paused, the coloring at the seam may be altered when printing resumes. Before you perform lengthy printing, check the amount of ink remaining in the ink cartridges.

⚠ WARNING

Never store ink, cleaning fluid, or discharged fluid in any of the following locations.

○ Any location exposed to open flame
○ Any location where high temperature may occur
○ Near bleach or any other such oxidizing agent or explosive material
○ Any location within the reach of children

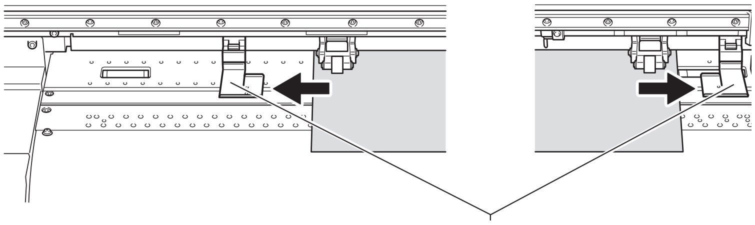
Fire may be a danger. Accidental ingestion by children may pose a health hazard.

2-6 Performing Cutting

To Perform Cutting

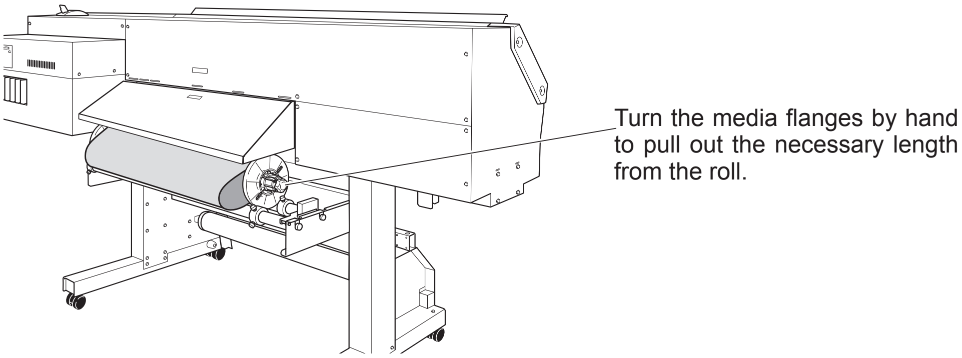
To perform cutting, carry out the procedure described below.

○ Move the media clamps to locations where they don't clamp the media. Alternatively, remove the media clamps.



○ When you're performing cutting only, then if you're cutting roll media, allow the media to hang down from the rear of the machine.

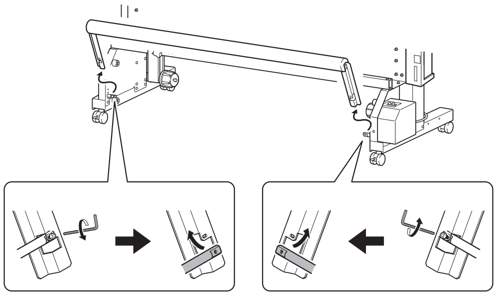
If cutting is started without doing this first, a motor error may occur or the roll may fall because the media is pulled with excessive force.


Turn the media flanges by hand to pull out the necessary length from the roll.

Important Notes on Cutting

○ Never use the media clamps. You can also detach them when not in use.

○ When you're performing printing followed immediately by cutting, then before you start cutting, allow the ink to dry sufficiently. Use your software RIP to make the setting for the drying time. For information on how to make the setting, refer to the documentation for the software RIP you're using. The drying time varies according to the media.



Hints and Tips for Cutting

○ Setting the [PREFEED] menu item to “ENABLE” makes the machine automatically feed out media and take it up again before cutting. This makes it unnecessary to run out media to the rear of the machine before the operation.

☞ P. 99, "Preventing Pulling of the Media with Undue Force When Performing Cutting Only"

○ The end of the cap for the blade holder may scrape or damage the printed surface. If this happens, increase the amount of blade extension.

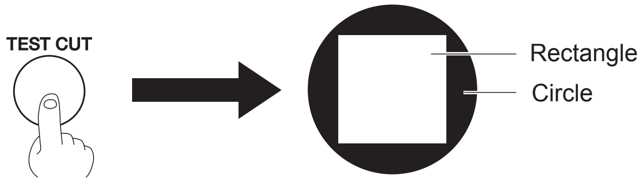
☞ P. 96, " Adjusting the Cutting-in Amount"

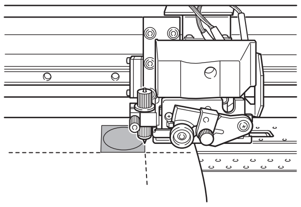
Performing a Cutting Test

For high-quality cutting, then before you perform actual cutting, we recommend carrying out a cutting test to check the cutting quality for the media. Before carrying out a cutting test, detach the media clamps.

Performing a Cutting Test

Hold down TEST CUT for one second or longer to perform a cutting test.
You can perform the cutting test at any location you want by using ◄ ► ▲ ▼ to move the cutting carriage. The front cover may be left open during movement, but be sure to close it before you press TEST CUT.





Peel off the cut shapes to verify the cutting quality, and make the setting for blade force. If two shapes peel off together, make the setting for blade force.

When Cutting the Printed Surface

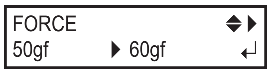
Hardened ink is thick. When cutting a printed surface, first perform a cutting test on the actual surface that has been printed.

☞ P. 46, "Making the Setting for Blade Force," p. 96, " Adjusting the Cutting-in Amount"

Making the Setting for Blade Force

Procedure

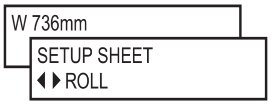
❶



```
FORCE        ⬍▶
50gf    ▶ 60gf  ↵
```

Press CUT CONFIG.
Use ▲ ▼ to enter the value.

❷



```
W 736mm
  SETUP SHEET
  ◀▶ROLL
```

Press ENTER to finish making the setting, and go back to the original screen.

Pressing CUT CONFIG enters the cutting configuration menu. You can also make the settings for other cutting conditions in addition to the blade force. Refer to the following pages.

☞ P. 95, "Fine-tuning the Cutting Conditions"

When you're finished making all the settings, send cutting data from the computer.

☞ P. 39, "Getting Ready to Receive Data from a Computer"

Chapter 3

Operation of the Media Take-up System

3-1 The Media Take-up System

Features of the Media Take-up System

Using the media take-up system lets you perform printing while the media is taken up automatically. This makes possible unattended operation at night and efficient printing of lengthy media.

Operating Conditions for the Media Take-up System

Never Use When Performing Cutting

Never use the media take-up system when you're performing cutting operations. Use is possible only when performing printing.

Use During Dual-pass Printing Not Possible

When you're performing dual-pass printing, the media must be pulled back, and so the media take-up unit cannot be used.

☞ P. 108 "Gloss Ink Features and Printing Methods"

Settings Related to Media Feed

When using the media take-up system, to avoid pulling media with undue force, be sure to observe the following points. Operations that pull the media with undue force, such as unsuitable take-up by the take-up system, can cause printing to stop or result in misalignment of the printing position.

○ Never use SET UP to pull the media back.
○ Never operate the MANUAL switch for the take-up unit when the loading lever is pulled back.
○ When loading and setting up media, set the [SETUP SHEET] menu item to "TU."
○ When feeding out media toward the front of the machine by pressing ▼, be sure to set the base point.
○ If the setting for pulling back media after printing has been made on the computer, then turn off the setting.
○ On the computer, set the margin from the print-end position to the next print-start position (the page spacing) at a value of 120 millimeters or more.
○ Set the [PREFEED] setting-menu item to "DISABLE."

When Performing Continuous Printing of Two or More Pages

When you're performing continuous printing and take-up for two or more pages, give attention to the following points.

○ If the setting to execute automatic cutoff of the media can be made on the computer, then turn this setting off. Making the setting on the computer to execute automatic cutoff of the media results in media cutoff after each page is printed. (When the [MEDIA CLAMP] menu item is set to [LONG], media cutoff is not performed.) Take-up quits as soon as the media is cut off.

About the Paper Tube

The included paper tube is a special part exclusively for use with this machine. Using something other than the included item may result in spinning without traction or other problems that impede media take-up.

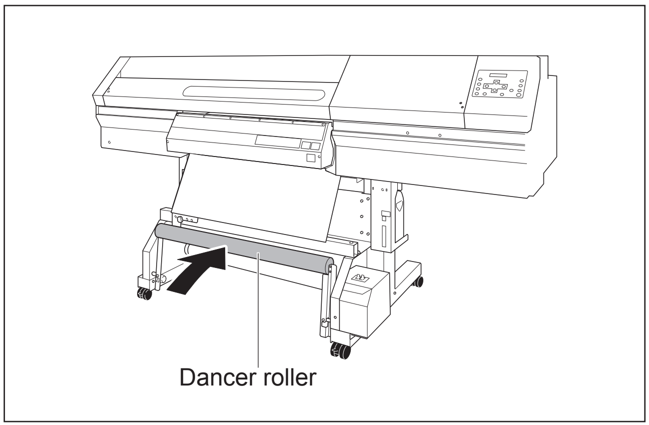
The paper tube is a part that wears out. The replacement cycle varies according to usage conditions, but to ensure good media take-up, monitor the state of the paper tube and replace it when necessary. To purchase a replacement, contact your authorized Roland DG Corp. dealer or Roland DG Corp.

3-2 Using the Media Take-up System

Loading Roll Media

1. Pass the media through the printer.

❶ Move the dancer roller toward the rear.

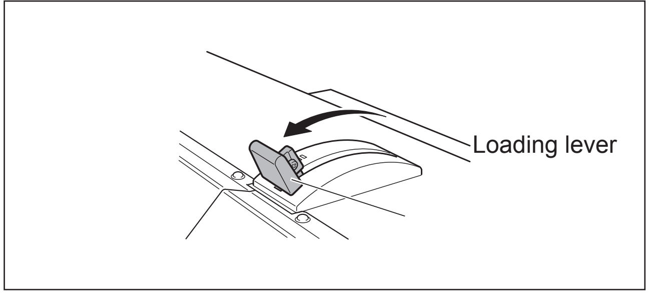


❷ Load the roll media.

☞ P.31, "Loading Media"

❸ Pull back the loading lever.

The media is secured in place.



2. Fasten the media to the paper tube.

When you attach the paper tube, insert it securely onto the end caps on the take-up unit. For information on how to install it, refer to the Setup Guide.

❶
```
SETUP SHEET
◄► TU
```

Use ◄ ► to select "TU."

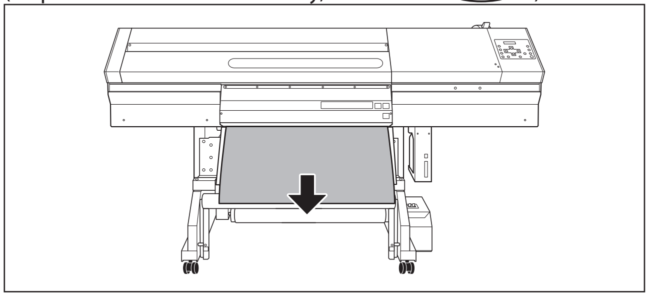
❷
```
LOAD SHEET           ▼
     TO TAKE-UP      ↵
```

Press SET UP.

The screen shown in the figure appears.

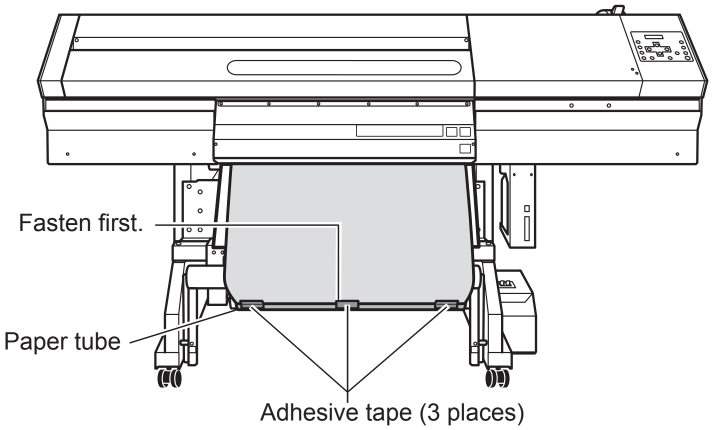
③ Press ▼ to adjust the length of the media to be pulled out.

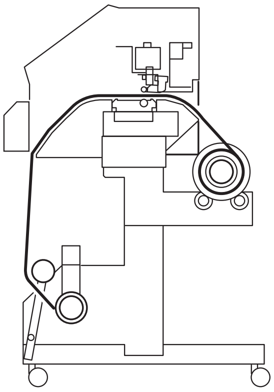
You can adjust the length of the media in 10-millimeter steps by pressing ▼.
(To pull out media continuously, hold down ▼.)



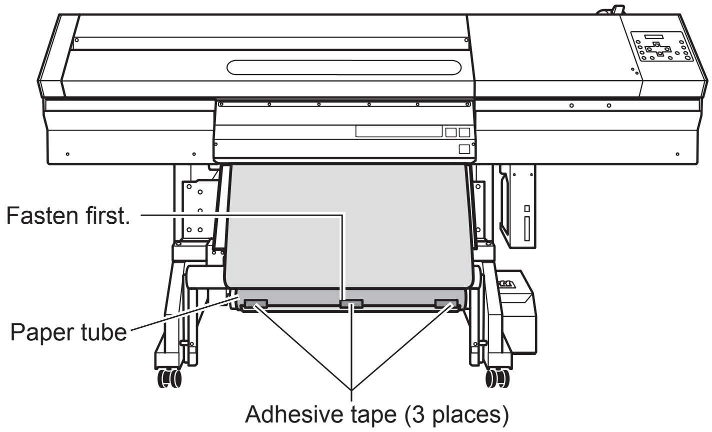
④ Fasten the media in place with tape at three locations (the center and both edges) so that the media is not at an angle.

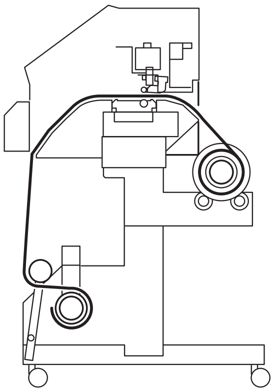
Take-up with outward curl


Fasten first.
Paper tube
Adhesive tape (3 places)



Take-up with inward curl


Fasten first.
Paper tube
Adhesive tape (3 places)

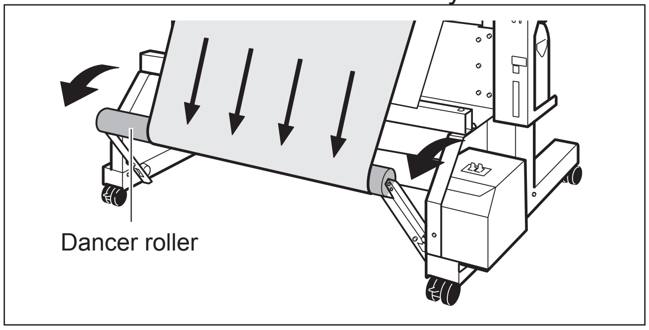


3. Make the setting for the direction of automatic take-up and perform take-up of the media onto the paper tube.

❶ TILT DANCER
ROLLER TO FRONT ↵

Press ENTER.
The media is pulled out and the screen shown in the figure appears.

❷ Pull the dancer roller back toward you.

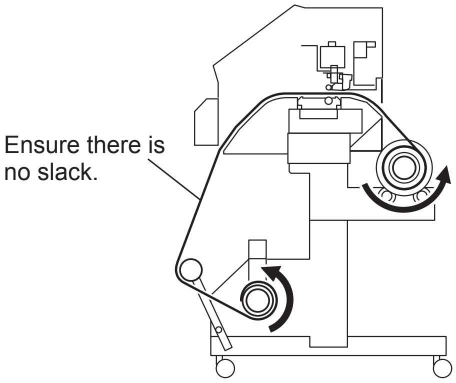

Dancer roller

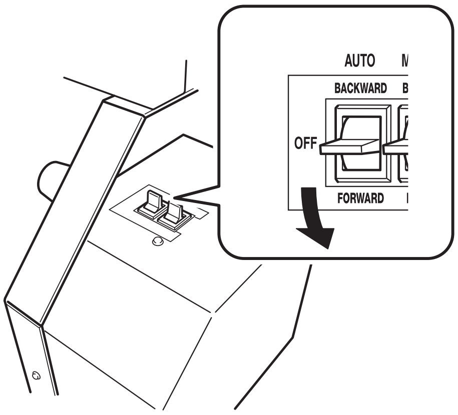
❸ CHECK
TAKE-UP SETTING ↵

Make sure the media is stretched taut, and press ENTER.
The screen shown in the figure appears.

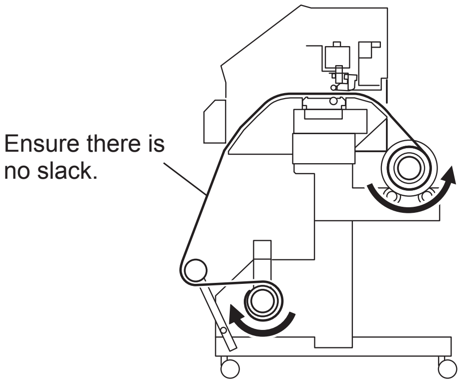
❹ Make the setting for the AUTO switch on the take-up unit.

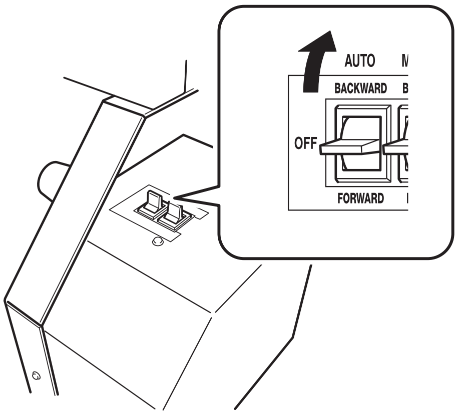
Take-up with outward curl


Ensure there is no slack.


AUTO
BACKWARD
OFF
FORWARD

Take-up with inward curl


Ensure there is no slack.


AUTO
BACKWARD
OFF
FORWARD

5 W 736mm

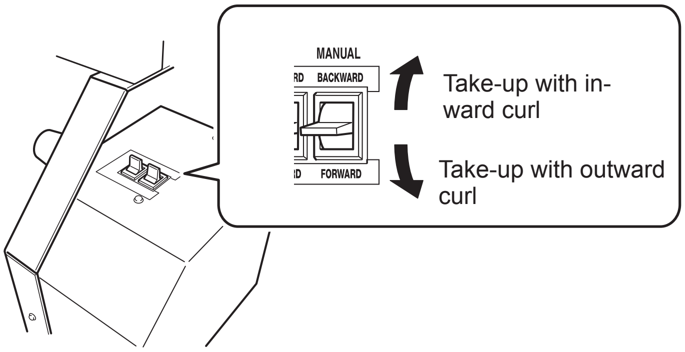
Press ENTER.

Making the setting is complete when the screen shown in the figure (the top menu) appears.

When you begin take-up, take care to ensure that the end of the media does not become rolled or creased.

To Take up Media Manually

You can take up media by using the MANUAL switch. However, never operate the MANUAL switch while the loading lever is pulled back. Doing so may cause the media to be pulled with excessive force, actuating the protective feature and resulting in an error.


MANUAL
RD BACKWARD
D FORWARD
Take-up with inward curl
Take-up with outward curl

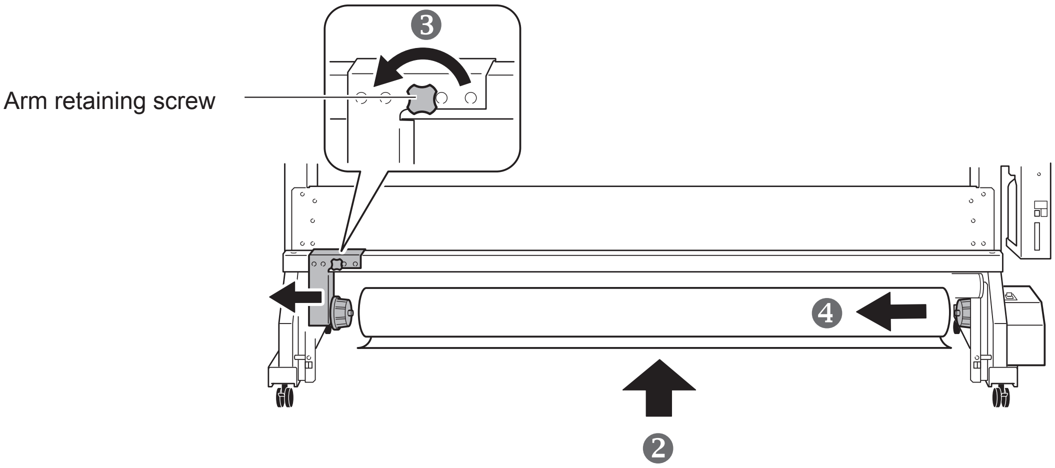
Removing Taken-up Media

⚠ CAUTION **Removal of taken-up roll media from the unit is a task which must be carried out by two or more persons.**
If dropped, such items may cause injury.

1. Cut off the media.

☞ P. 38, "Cutting Off the Media"

2. Support the paper tube to prevent it from falling.
3. Loosen the arm retaining screw and move the arm.
4. Detach the paper tube from the end caps.

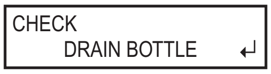

Arm retaining screw
3
4
2

Chapter 4
Maintenance and Adjustment

4-1 Daily Care and Maintenance

Disposing of Discharged Ink

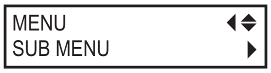
The drain bottle collects discharged fluid. Dispose of collected material before the bottle becomes full. The message shown in the figure appears when a certain amount of discharged fluid has collected in the bottle. Follow the procedure below to discard the discharged fluid.


CHECK
DRAIN BOTTLE ↵

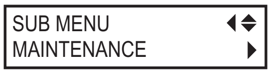
Press ENTER.

Resetting the discharged-fluid counter after disposal makes the message shown in the figure disappear.

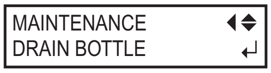
1. Choose the "DRAIN BOTTLE" menu item.

❶

MENU ◀⬍
SUB MENU ▶

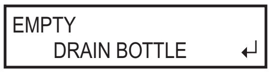
Press MENU.
Press ▼ several times.

❷

SUB MENU ◀⬍
MAINTENANCE ▶

Press ►.
Press ▲.

❸

MAINTENANCE ◀⬍
DRAIN BOTTLE ↵

Press ►.
Press ▲.

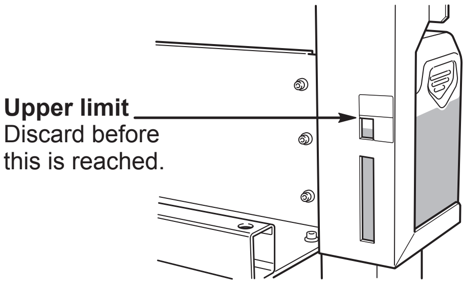
❹

EMPTY
DRAIN BOTTLE ↵

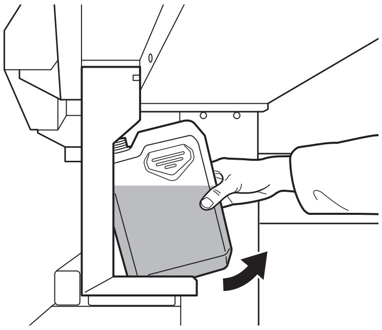
Press ENTER.
Preparations are complete when this screen appears.

2. Empty the bottle by discarding the discharged fluid.

⚠ CAUTION

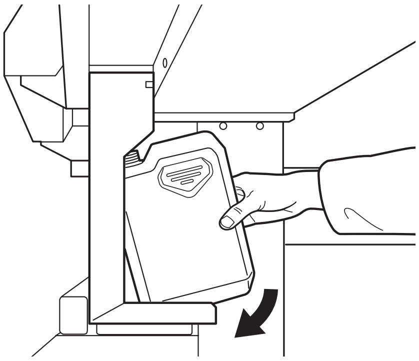
Before you detach the drain bottle, be sure to wait for the screen to display "EMPTY DRAIN BOTTLE."
Failing to follow this procedure may cause discharged fluid to flow out of the tube and spill, soiling your hands or the floor.

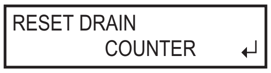

Upper limit
Discard before this is reached.



3. Attach the emptied bottle and reset the discharged-fluid count.

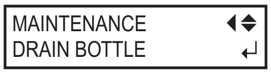
❶ Attach the emptied bottle.



❷ 

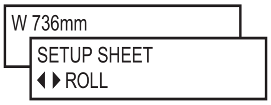
RESET DRAIN
COUNTER ↵

Press ENTER.

❸ 

MAINTENANCE ◂⬍
DRAIN BOTTLE ↵

Press ENTER a second time.

❹ 

W 736mm
SETUP SHEET
◂▸ROLL

Press MENU.
Press ◄ to go back to the original screen.

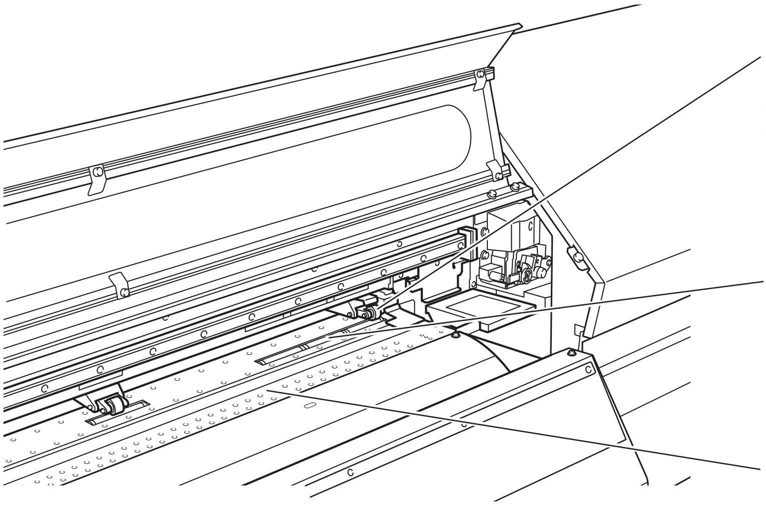
⚠ WARNING **Never place discharged fluid near open flame.**
Doing so may cause fire.

⚠ CAUTION **To store discharged fluid temporarily, place it in the included drain bottle or in a durable sealed container such as a metal can or polyethylene tank, and cap tightly.**
Any spillage or vapor leakage make cause fire, odor, or physical distress.

Store discharged fluid in a location not exposed to direct sunlight.
When temporarily storing discharged fluid in the included drain bottle, keep the drain bottle out of direct sunlight. Otherwise the discharged fluid may harden, making the drain bottle unusable.

Dispose of discharged fluid properly, in accordance with the laws in effect in your locale.
Discharged fluid is flammable and contains toxic ingredients. Never attempt to incinerate discharged fluid or discard it with ordinary trash. Also, do not dispose of it in sewer systems, rivers, or streams. Doing so may have an adverse impact on the environment.

Cleaning



Pinch rollers
Periodically wipe away any grime. Failure to clean properly may result in the transfer of grime to the surface of media.

Grit rollers
Remove buildup of media and other material using a brush. Never use a metal brush.

Wipe away any buildup of ink or grime on the media path.

⚠ **WARNING** **Never use gasoline, alcohol, thinner, or any other flammable material.** Doing so may cause fire.

○ This machine is a precision device, and is sensitive to dust and dirt. Perform cleaning on a daily basis.
○ Clean by wiping with a cloth moistened by neutral detergent diluted with water then wrung dry.
○ Never attempt to oil or lubricate the machine.

Care and Maintenance of the Print Heads

Daily Care and Maintenance

Perform maintenance using the machine's head cleaning feature.

☞ P. 40, "Printing Tests and Cleaning," p .57, "When Head Cleaning Is Not Effective"

Periodic Care and Maintenance

Periodic care is essential to ensuring optimal printing at all times. Based on your frequency of use, periodically clean the print heads using a cleaning kit.

☞ P. 59, "Cleaning Using the Cleaning Kit"

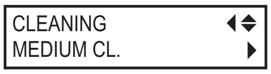
Note: The print heads are components that wear out. Periodic replacement is required, with the frequency of replacement depending on use. Purchase them from your authorized Roland DG Corp. dealer.

4-2 When Head Cleaning Is Not Effective

Performing More Powerful Cleaning

When the problems such as dot drop-out are not cleared up by the "normal cleaning," try the more forceful "medium cleaning" or the even more forceful "powerful cleaning." Note, however, that this consumes more ink than "normal cleaning," and too-frequent use may damage the print heads themselves. Avoid using it more than necessary.
In the same way as for normal cleaning, choose and clean only the group of a head that are incapable of correct printing.

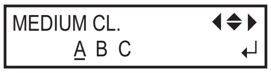
1. Choose "medium cleaning" or "powerful cleaning."


CLEANING ◄▲▼
MEDIUM CL. ►

Press CLEANING.
Use ▲ ▼ to choose "MEDIUM CL." or "POWERFUL CL."

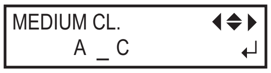
2. Specify the head group to clean.

❶

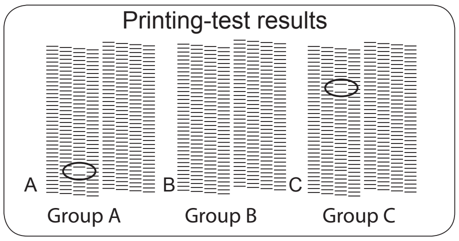

MEDIUM CL. ◄▲▼►
A B C ↵

Press ►.

❷


MEDIUM CL. ◄▲▼►
A _ C ↵

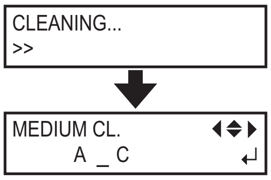
Use ◄ ► to choose the group of heads that is not to be cleaned.
Use ▲ ▼ to get rid of the group display.
Repeat this procedure to display the groups of only the heads that require cleaning.
Of groups A through C, cleaning is performed only for the groups displayed.



If the Printing-test Results Are Difficult to Interpret
Examine the results from different angles in a well-lighted location. Take advantage of reflected light to enable visual checking. We recommend performing the printing test on transparent or silver-colored media.

3. Start cleaning.

❶


CLEANING...
>>

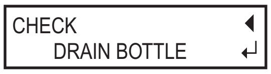
MEDIUM CL. ◄▲▼►
A _ C ↵

Press ENTER.
If You Chose "MEDIUM CL."

The screen shown in the figure appears, then cleaning starts.

When it finishes, the screen shown in the figure appears. Go on to Step ❹

If You Chose "POWERFUL CL."

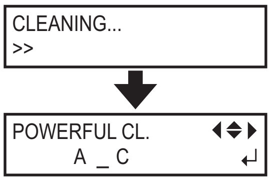

CHECK ◄
DRAIN BOTTLE ↵

The screen shown in the figure appears. Go on to Step ❷.

② Check the drain bottle.
If the amount of discharged fluid is near the upper-limit line, then remove the bottle, discard the collected fluid, and reattach the bottle.

☞ P. 54, "Disposing of Discharged Ink," step *2*

③



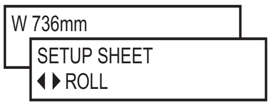
CLEANING...
>>

POWERFUL CL.
A _ C

Press ENTER.
The screen shown in the figure appears, then cleaning starts.

When it finishes, the screen shown in the figure appears again. Go on to Step ④.

④



W 736mm

SETUP SHEET
ROLL

Press MENU.
Press ◄ to go back to the original screen.

When Powerful Cleaning Is Not Effective

If problems such as dot drop-out persist even after you have performed powerful cleaning several times, then use the cleaning kit to clean the heads. Such cleaning can be effective when carried out periodically, according to the frequency of use.

☞ P. 59, "Cleaning Using the Cleaning Kit"

4-3 Cleaning Using the Cleaning Kit

When the Cleaning Kit Becomes Necessary

Periodic Care and Maintenance

At least once a month, clean the print heads, UV emitter, and other such areas using the cleaning kit.

When Dot Drop-out or the Like Occur Frequently

When the machine's head-cleaning feature does not correct the problem, clean the print heads using the cleaning kit.

When Hardening of the Ink on Printed Material Is Insufficient

Clean the UV emitter using the cleaning kit.

- ○ If you use up the cleaning kit, purchase a new one from your authorized Roland DG Corp. dealer.
- ○ The print heads are components that wear out. Periodic replacement is required, with the frequency of replacement depending on use. Purchase them from your authorized Roland DG Corp. dealer.

How to Perform Cleaning

Important Notes on This Procedure

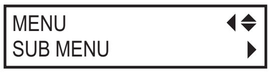
- ○ Cleaning requires the included cleaning liquid and commercially available glass cleaner. Have these on hand before you start.
- ○ Before attempting this operation, remove any media.
- ○ To prevent the print heads from drying out, finish this procedure in 30 minutes or less.
- ○ A warning beep sounds after 30 minutes. At this time, stop work, attach the front cover, and press ENTER. When the head-protection operation finishes, restart the procedure from the beginning.
- ○ Never use any implement other than the included cleaning stick. Cotton swabs or other lint-producing items may damage the heads.
- ○ Use one cleaning stick per cleaning session, then discard the stick after use. Reusing cleaning sticks may reduce printing quality.
- ○ Never immerse a cleaning stick that has already been used to perform cleaning in the cleaning liquid. Doing so may degrade the cleaning liquid.
- ○ Never touch the nozzle surface of the heads.
- ○ Stroke the sponges very gently, applying as little pressure as possible. Never rub, scrape, or crush them.

⚠ CAUTION **Be sure to perform operations as specified by these instructions, and never touch any area not specified in the instructions.**
Sudden movement of the machine may cause injury.

1. Change to the print-head manual-cleaning mode.

❶ Remove any media.

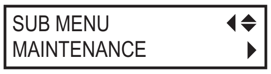
❷



MENU ◄⬍
SUB MENU ►

Press MENU.
Press ▼ several times.

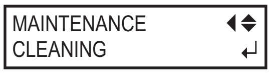
❸



SUB MENU ◄⬍
MAINTENANCE ►

Press ►.
Press ▲.

❹



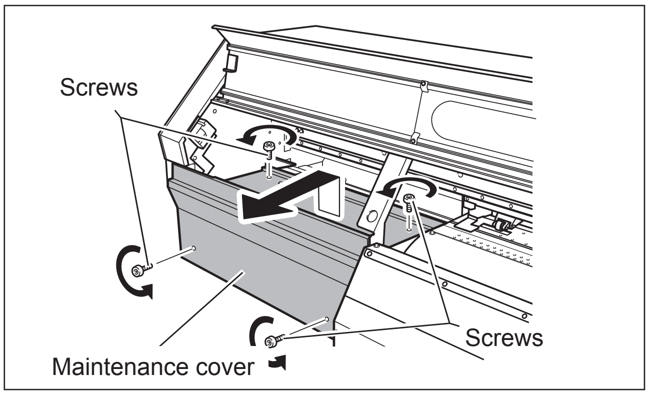
MAINTENANCE ◄⬍
CLEANING ↵

Press ►.

⑤

OPEN MAINTE-
NANCE COVER ↵

Press ENTER.
Open the front cover and remove the maintenance cover.


Screws
Screws
Maintenance cover

⑥

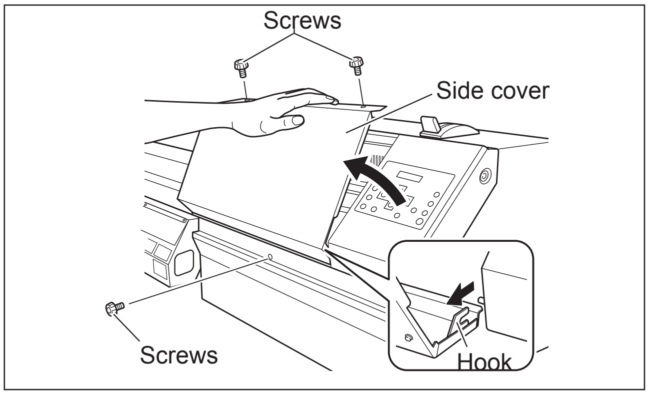
NOW PROCESSING..

OPEN SIDE
COVER

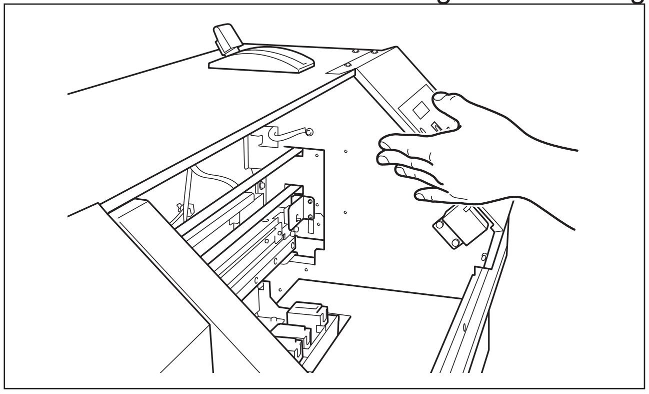
Close the front cover and press ENTER.

The print-head carriage moves to the left side of the machine, and then the screen shown in the figure appears.

⑦ Remove the side cover.


Screws
Side cover
Screws
Hook

⑧ Touch the location shown in the figure to discharge any static electricity.



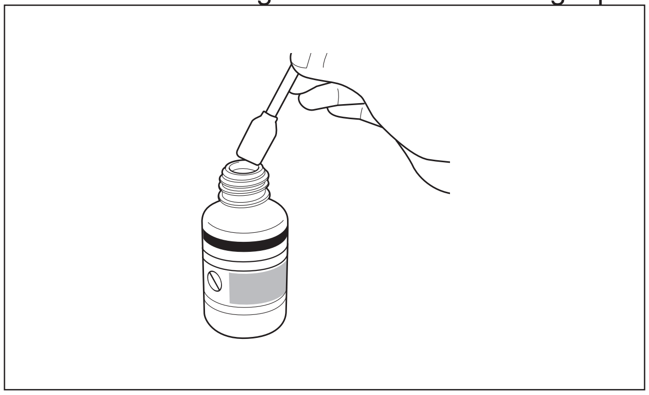
⑨

FINISHED?
↵

Preparations are complete when this screen appears.

2. Clean using the cleaning stick. Be especially careful to clean away any fibrous dust (lint).

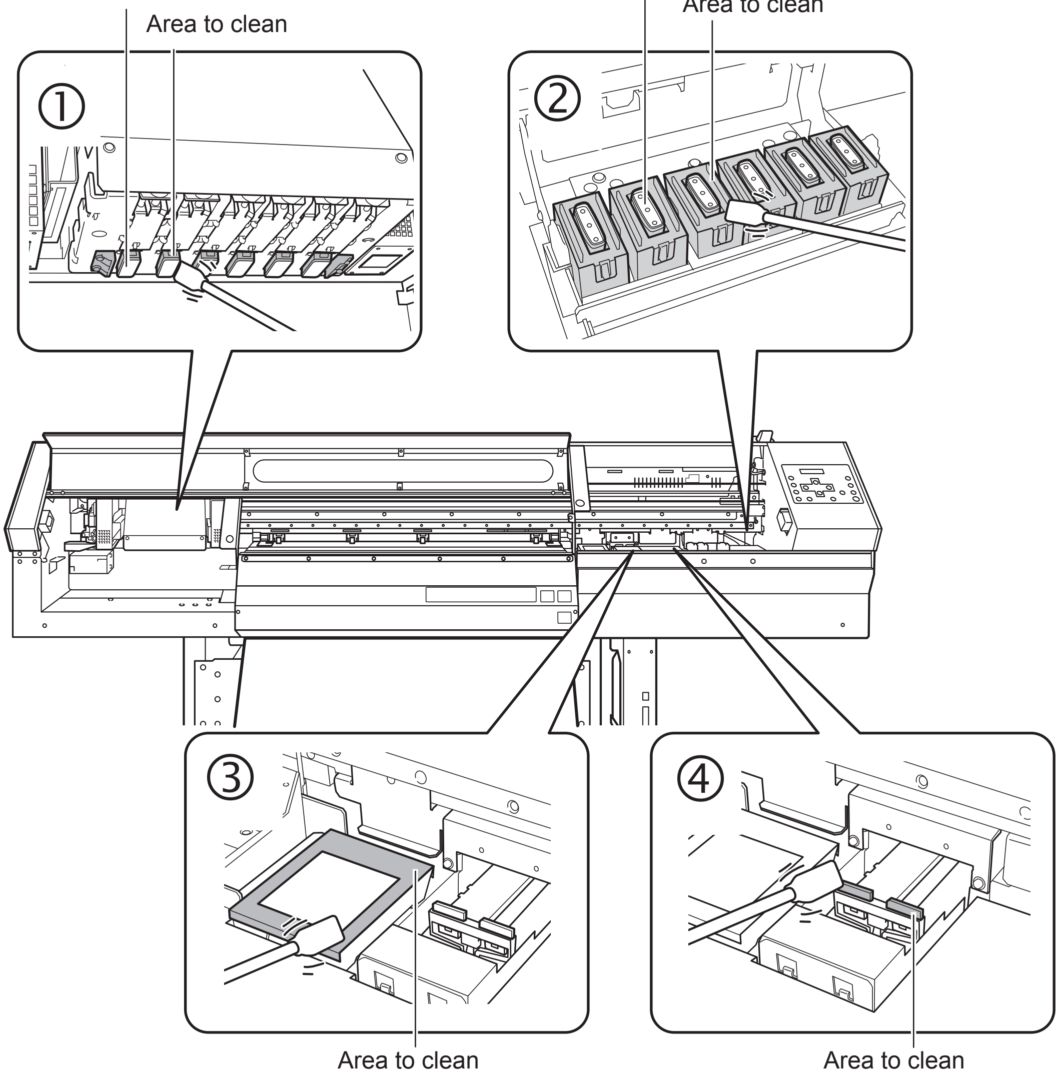
❶ Moisten the cleaning stick with the cleaning liquid.



❷ Perform cleaning in the sequence shown in the figure below.

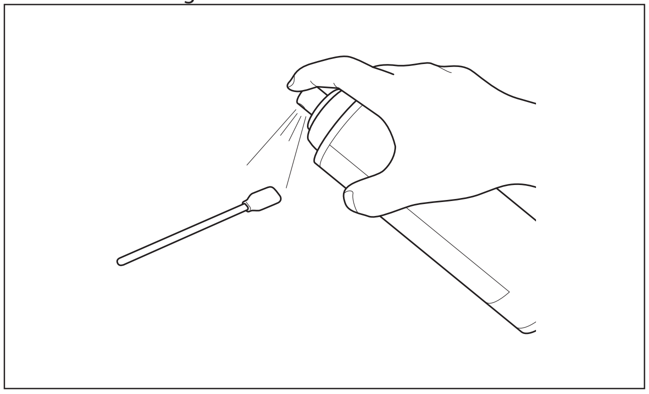
Never touch the nozzle surface.
Clean only the metal frame.

Gently stroke the sponge.
Never rub with force.

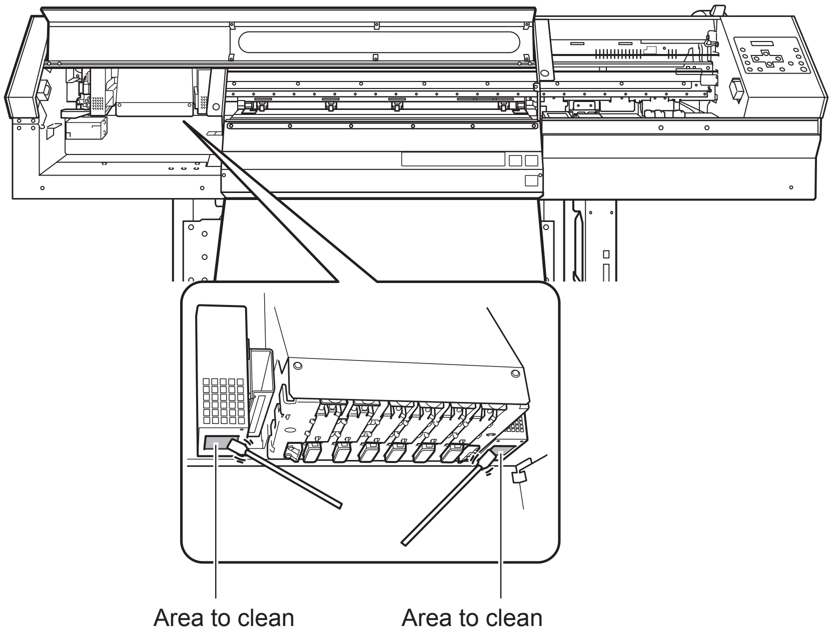

Area to clean
Area to clean
①
②
③
④
Area to clean
Area to clean

❸ Apply commercially available glass cleaner to the cleaning stick.

Use a new cleaning stick.



❹ Clean the locations shown in the figure.


Area to clean
Area to clean

3. Quit the manual cleaning mode.

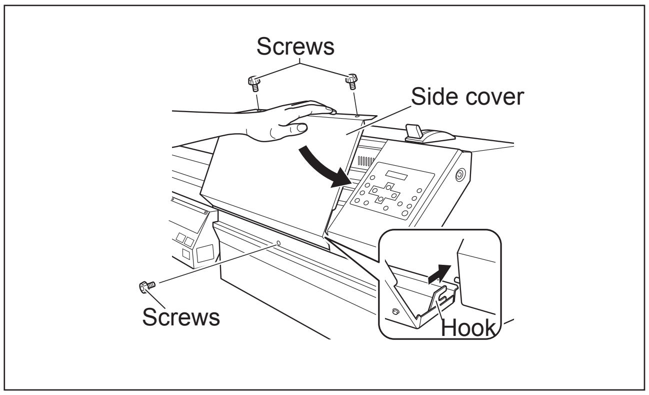
❶

```
CLOSE SIDE
     COVER    ↵
```

Press ENTER.

The screen shown in the figure appears.

❷ Attach the side cover.


Screws
Side cover
Screws
Hook

❸ CLOSE FRONT
COVER

Press ENTER.

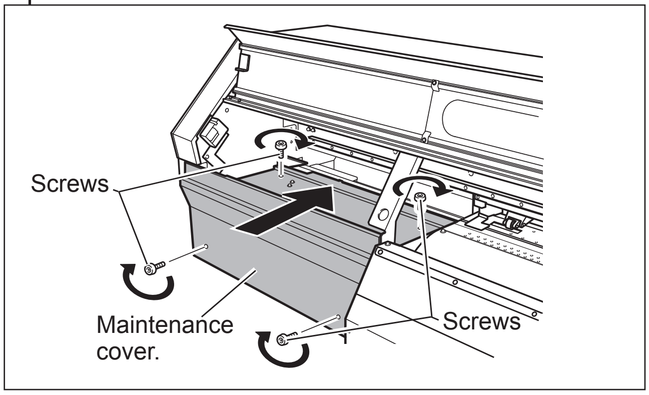
❹ CLEANING...
>>

CLOSE MAINTE-
NANCE COVER ↵

Close the front cover.

The print-head carriage moves to the right side of the machine, and then the screen shown in the figure appears.

❺ Open the front cover and attach the maintenance cover.



❻ MAINTENANCE ◀▲▼
CLEANING ↵

Close the front cover.
Press ENTER.

❼ W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◀ to go back to the original screen.

4. Perform a printing test to verify the results of the procedure.

Perform a printing test to check the results.

Perform cleaning using the machine's cleaning feature several times when necessary.

☞ P. 40, "Printing Tests and Cleaning"

4-4 Replacing Consumable Parts

Replacing the Wipers

```
TIME FOR
  WIPER REPLACE      ↲
```

Press ENTER

The wipers are components that you use when cleaning the print heads. When the screen displays a message like the one shown, it means the item needs to be replaced. Replace with new items.

⚠ CAUTION **Be sure to perform operations as specified by these instructions, and never touch any area not specified in the instructions.**
Sudden movement of the machine may cause injury.

1. Display the [REPLACE WIPER] menu.

❶ Remove any media from the platen.

❷
```
MENU                ◂⬍
SUB MENU             ▸
```

Press MENU.
Press ▼ several times.

❸
```
SUB MENU            ◂⬍
MAINTENANCE          ▸
```

Press ►.
Press ▲.

❹
```
MAINTENANCE         ◂⬍
REPLACE WIPER        ↲
```

Press ►.
Press ENTER.

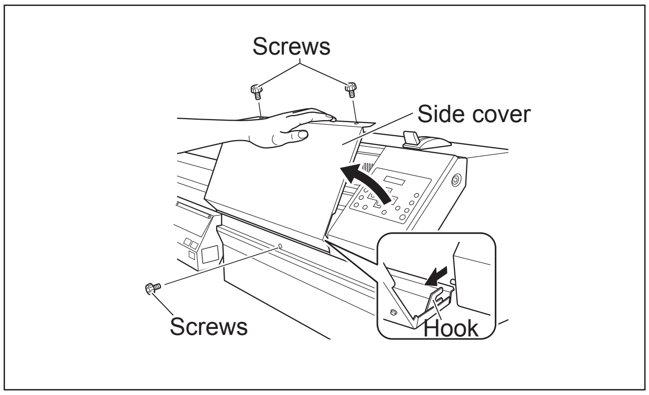
❺
```
NOW PROCESSING..
```

↓

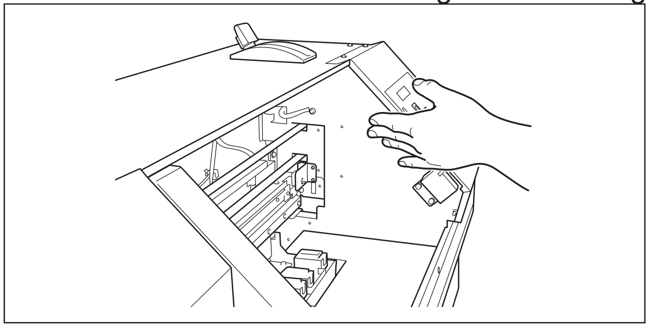
```
OPEN SIDE
          COVER
```

The print-head carriage moves to a location where wiper replacement is possible, and then the screen shown in the figure appears.

❻ Remove the side cover.



❼ Touch the location shown in the figure to discharge any static electricity.



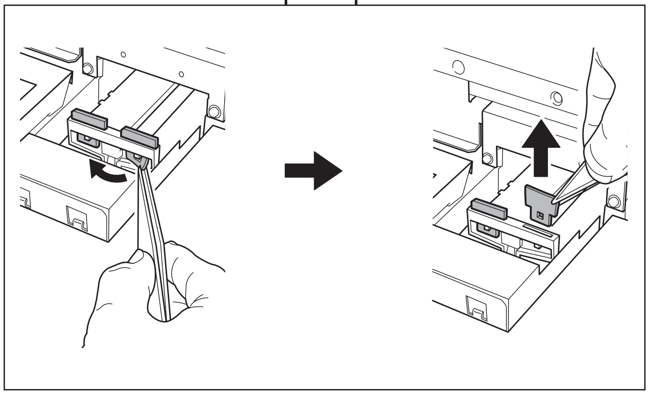
❽

```
FINISHED?
                ↵
```

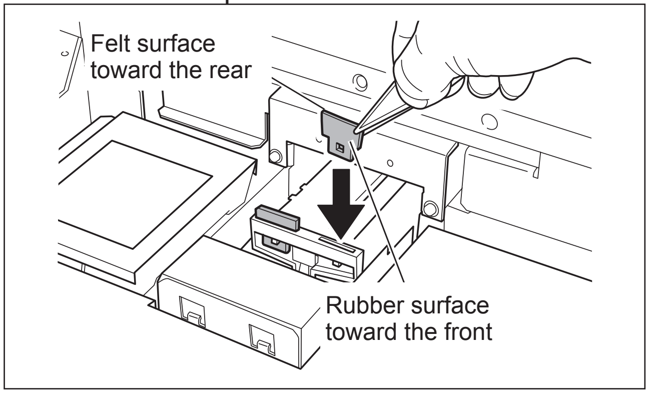
Preparations are complete when this screen appears.

2. Replace the wipers. Use the included tweezers.

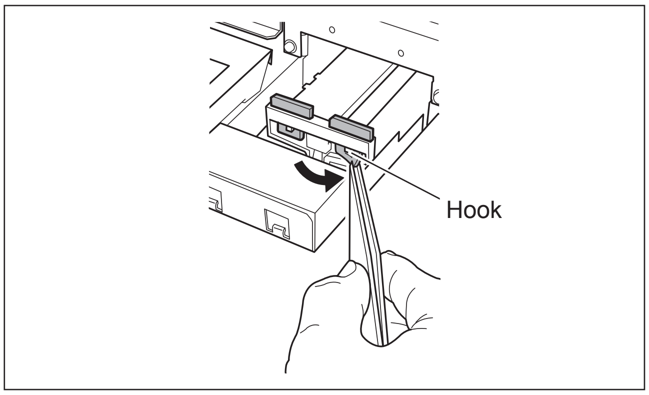
❶ Detach the old wipers.
Detach the hook and pull up and out.



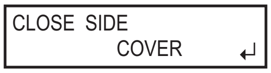
❷ Insert the new wipers.


Felt surface toward the rear
Rubber surface toward the front

❸ Attach the hook.

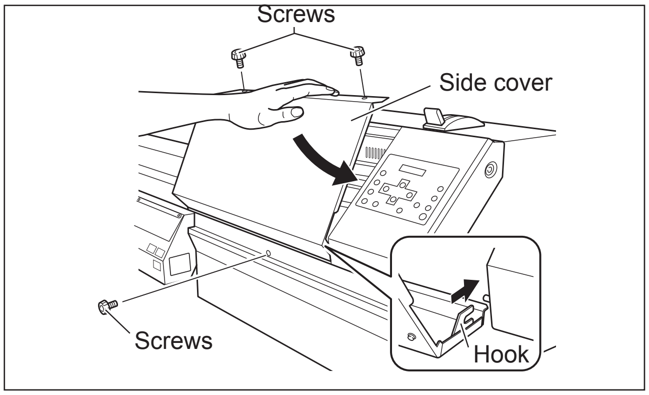


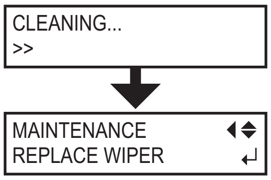
3. Quit the [REPLACE WIPER] menu.

❶ 
CLOSE SIDE
COVER ↵

Press ENTER

❷ Attach the side cover.

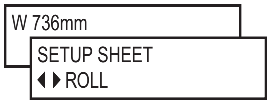


❸ 
CLEANING...
>>

MAINTENANCE ◀▲▼
REPLACE WIPER ↵

Press ENTER .

After the process to quit the wiper replacement mode, the screen shown in the figure appears.

❹ 
W 736mm
SETUP SHEET
◀▶ROLL

Press MENU to go back to the original screen.

❺ Perform a printing test to verify the results of the procedure.

☞ P. 40, "Printing Tests and Cleaning"

Replacing the Blade

If the blade becomes dull, replace it with the included replacement blade.

⚠ CAUTION **Be sure to perform operations as specified by these instructions, and never touch any area not specified in the instructions.**
Sudden movement of the machine may cause injury.

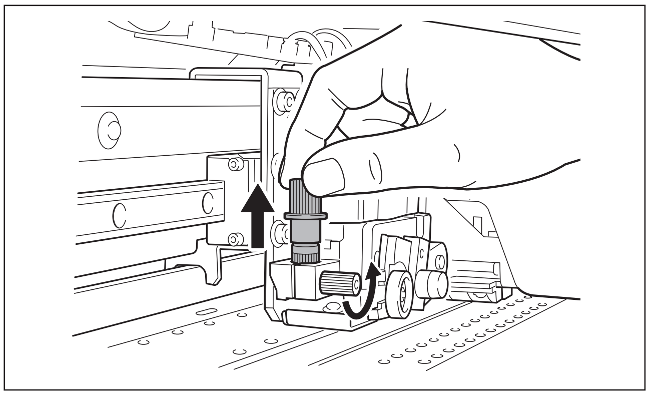
⚠ CAUTION **Never touch the tip of the blade with your fingers.**
Doing so may result in injury.

1. Enter the blade replacement mode.

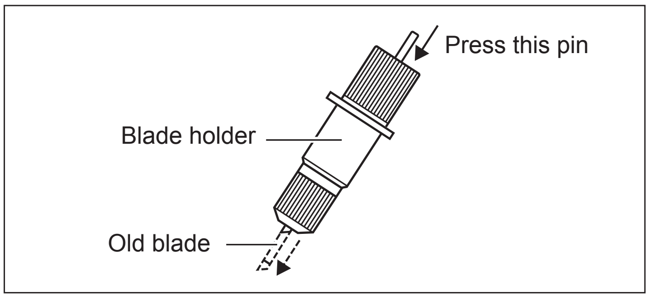
➊	MENU ◀⬍ SUB MENU ▶	Press MENU. Press ▼ several times.
➋	SUB MENU ◀⬍ MAINTENANCE ▶	Press ►. Press ▲.
➌	MAINTENANCE ◀⬍ REPLACE KNIFE ↵	Press ►. Press ▼ twice.
➍	NOW PROCESSING.. ⬇ OPEN FRONT COVER	Press ENTER. The cutting carriage moves to a location permitting blade replacement, and then the screen shown in the figure appears.
➎	FINISHED? ↵	Open the front cover. Preparations are complete when this screen appears.

2. Replace the blade.

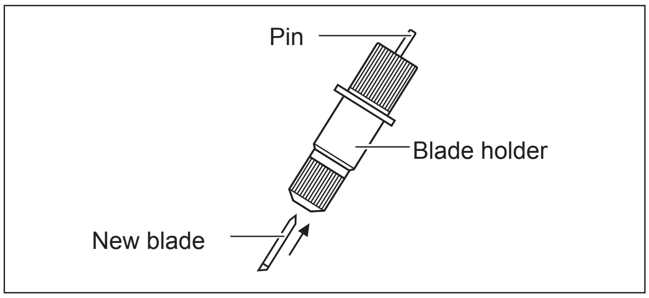
➊ Remove the blade holder.



❷ Remove the old blade.

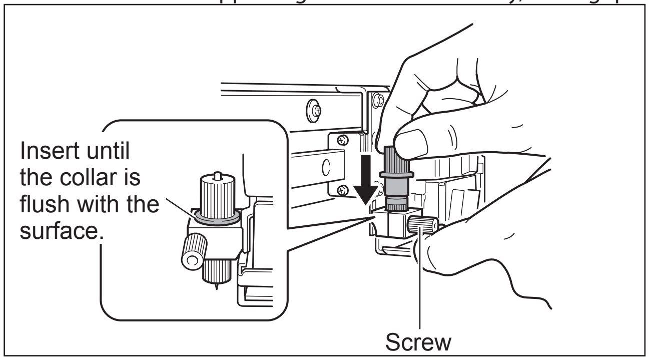

Press this pin
Blade holder
Old blade

❸ Install a new blade.


Pin
Blade holder
New blade

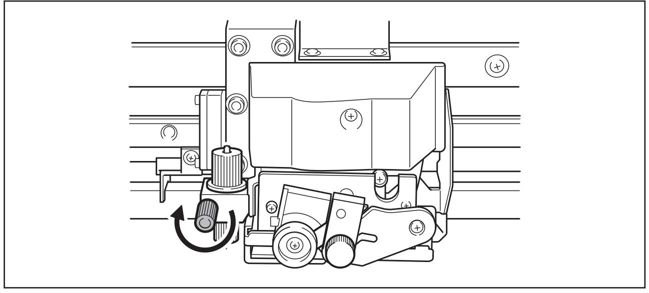
❹ Reinstall the blade holder.

If installed without supporting the screw in this way, cutting quality may become poor.

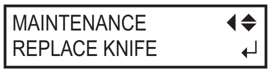

Insert until the collar is flush with the surface.
Screw

❺ Tighten the screw.

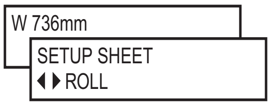
Tug the blade holder upward to make sure it does not come loose.



3. Quit the blade replacement mode.

❶ 
MAINTENANCE ◀⬍
REPLACE KNIFE ↵

Close the front cover.
Press ENTER.

❷ 
W 736mm
SETUP SHEET
◀▶ROLL

Press MENU to go back to the original screen.

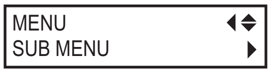
Replacing the Separating Knife

If the separating knife becomes dull, replace it with the included replacement knife.

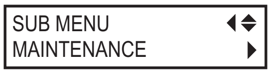
⚠ CAUTION **Be sure to perform operations as specified by these instructions, and never touch any area not specified in the instructions.**
Sudden movement of the machine may cause injury.

⚠ CAUTION **Never touch the tip of the separating knife with your fingers.**
Doing so may result in injury.

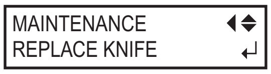
1. Enter the blade replacement mode.

❶ 
MENU ◀⬍
SUB MENU ▶

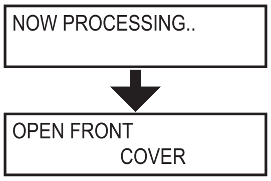
Press MENU.
Press ▼ several times.

❷ 
SUB MENU ◀⬍
MAINTENANCE ▶

Press ►.
Press ▲.

❸ 
MAINTENANCE ◀⬍
REPLACE KNIFE ↵

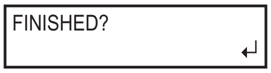
Press ►.
Press ▼ several times.

❹ 
NOW PROCESSING..

OPEN FRONT
COVER

Press ENTER.

The cutting carriage moves to a location where blade replacement is possible, and then the screen shown in the figure appears.

❺ 
FINISHED? ↵

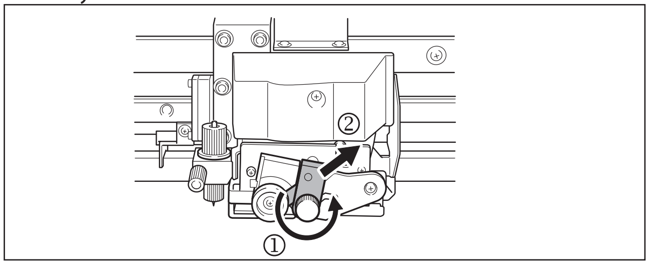
Open the front cover.
Preparations are complete when this screen appears.

2. Replace the separating knife.

❶ Remove the separating knife.

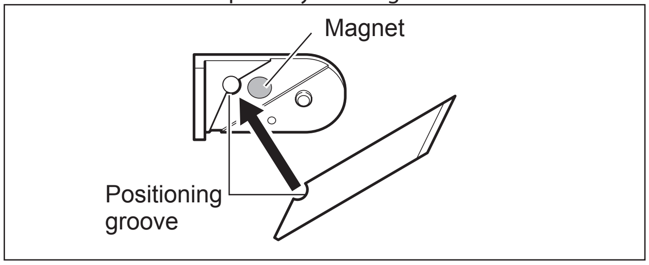
① Loosen the screw until it slips out.

② Grasp the screw portion, and slowly pull it out in the direction of the arrow. When doing this, do not pull it back toward you.

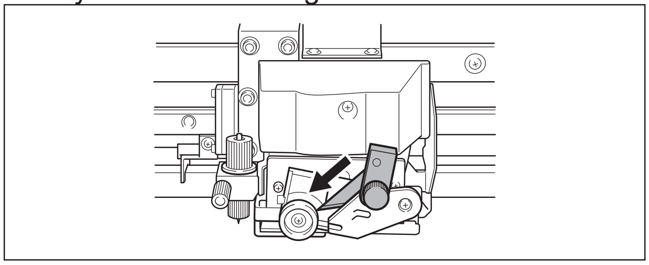


❷ Install a new knife.

The knife is secured in place by the magnet.

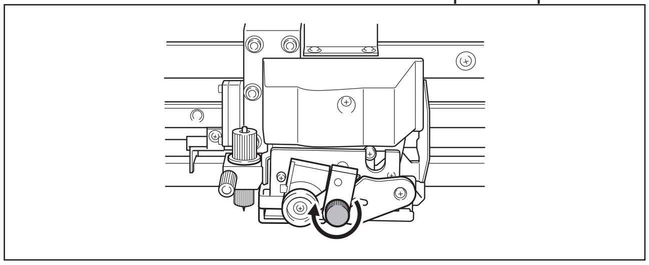


❸ Slowly insert it into the groove.

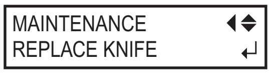


❹ Tighten the screw.

Take care to ensure that the knife does not slip out of position at this time.

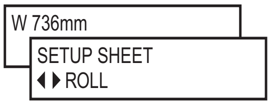


3. Quit the blade replacement mode.

❶ 

MAINTENANCE ◀▲▼
REPLACE KNIFE ↵

Close the front cover.
Press ENTER .

❷ 

W 736mm
SETUP SHEET
◀▶ROLL

Press MENU to go back to the original screen.

4-5 Adjustment of White Ink

Maintenance Tasks for White Ink

When white ink is used, dot drop-out or other problems that impede normal ink discharge may occur even when powerful cleaning or manual cleaning of the print heads has been performed.This can occur because the ingredients in white ink tend to settle, and may harden if allowed to stand for a lengthy time. If this happens, carry out the maintenance operations described below.

These maintenance operations require two SOL INK cleaning cartridges.

Procedure

❶
```
MENU          ◄◆
INK RENEWAL    ↵
```

Press ENTER

Press ▲ several times.

❷
```
EMPTY
    DRAIN BOTTLE ↵
```

Press ENTER

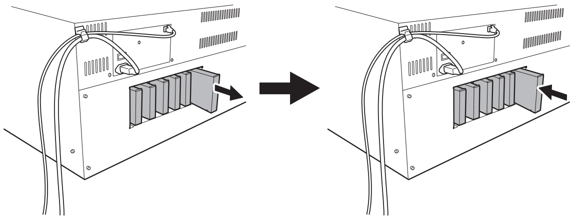
Discard the discharged fluid and attach the emptied bottle.

❸
```
REMOVE CARTRIDGE
    123456
```
↓
```
SET CARTRIDGE
    123456
```
↓
```
RENEWING INK . . .
>>>>>>
```

Press ENTER

① Remove the ink cartridges from slots 5 and 6.

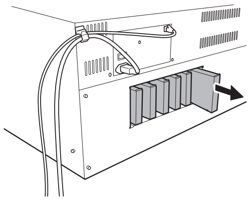
② Insert SOL INK cleaning cartridges into slots 5 and 6



❹
```
REMOVE CL-LIQUID
    123456
```
↓
```
RENEWING INK . . .
>>>>>>>>>>>>
```

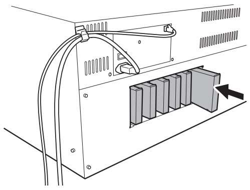
Remove the SOL INK cleaning cartridges from slots 5 and 6.

Carry out steps ❸ and ❹ as many times as indicated by the on-screen messages.



❺
```
SET CARTRIDGE
    123456
```
↓
```
RENEWING INK . . .
>>>>>>>>>>>>>>>>>>>>
```

Insert the ink cartridges into slots 5 and 6.



❻
```
W 736mm
  SETUP SHEET
  ◄► ROLL
```

Press MENU

Press ◄ to go back to the original screen.

4-6 When Not in Use for a Prolonged Period

Keep Performing Maintenance

Switch on the power once every two weeks.

Switch on the sub power once every two weeks. When you turn on the power, the machine automatically performs some operations such as those to keep the print heads from drying out. Allowing the machine to stand completely unused for a prolonged period may damage the print heads, so be sure to switch on the power to perform these automatic operations.

Keep at a Constant Temperature and Relative Humidity

Even when the machine is not in use, keep it at a temperature of 5 to 40˚C (41 to 104˚F) and a relative humidity of 20 to 80% (with no condensation). Temperatures that are too high may degrade the ink and cause malfunction. Temperatures that are too low may cause the ink to freeze and damage the heads.

Alarm Feature

```
PRESS THE POWER
KEY TO CLEAN
```

This feature is to remind you to switch on the sub power once a month. When the machine remains unused for about one month, this screen appears and a warning beep sounds. If this screen appears, switch on the sub power. When maintenance operations finish, switch off the sub power.

This feature operates when the printer's main power is turned on. We recommend leaving on just the main power to the printer even when the machine is to remain out of use for a prolonged period.

Important Note on Draining Ink

This machine has features for draining internal ink and for performing washing using SOL INK cleaning cartridges, but they should never be used except in special cases. Allowing the machine to stand without ink for a prolonged period may damage the heads, even if internal washing is performed. Once ink has been filled, then as a rule the ink should never be drained.

4-7 When Moving the Unit

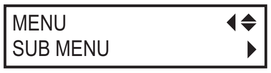
Procedures from Preparing to Move Through Reinstalling

To move the machine, you must completely drain all ink inside the machine and secure the print heads in place with packing materials to protect them. Attempting to move the machine without first doing this may result in damage to internal components due to leaking ink or damage to the heads.
This operation requires four unused SOL INK cleaning cartridges. Have these on hand before you start.
For information on how to remove and attach the various items, refer to the Setup Guide.

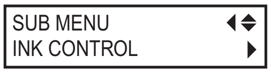
Important Notes on Moving

○ Be sure to use SOL INK cleaning cartridges. Use of any other type may result in breakdown.
○ Once the preparations for moving are complete, move the machine and fill it with ink with as little delay as possible. Allowing the machine to stand without ink may damage the print heads.
○ When moving the machine, keep it at a temperature between 5 to 40˚C (41 to 104˚F) and at relative humidity between 20 to 80% (with no condensation). Failure to do so may result in breakdown.
○ Handle the machine with care when moving, keeping it level (not tilted at an angle) and preventing it from striking other objects.

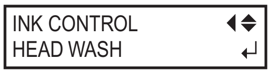
1. Drain the ink and wash the interior.

❶

MENU ◀⬍
SUB MENU ▶

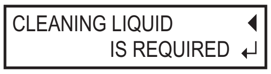
Press MENU .
Press ▼ several times.

❷

SUB MENU ◀⬍
INK CONTROL ▶

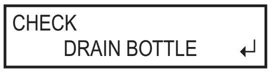
Press ▶ .
Press ▲ twice.

❸

INK CONTROL ◀⬍
HEAD WASH ↵

Press ▶ .
Press ▼ twice.

❹

CLEANING LIQUID ◀
IS REQUIRED ↵

Press ENTER .
Make sure the cleaning fluid is ready.

❺

CHECK
DRAIN BOTTLE ↵

Press ENTER .
Discard the discharged ink in the drain bottle.
Be sure to discard the discharged ink.

❻ Press ENTER .
Thereafter, follow the on-screen instructions to carry out the operations.
After cleaning has finished, the sub power is automatically switched off.

☞ P. 54, "Disposing of Discharged Ink," p. 117, "Draining Ink and Performing Internal Washing"

2. Secure the print heads in place.

❶ Remove the drain bottle and detach the drain-bottle stand. Then attach the drain-tube cover.

❷ Flip the loading lever to the rear.

❸ Secure the print heads in place using the packing material.

❹ Detach the roll media from the media holders.

❺ Detach the media holders and the shafts.
If necessary, also detach the dancer roller, rail slider, and stand legs etc.
The machine is now ready to be moved.

3. Immediately move the machine and fill it with ink.

❶ Once the preparations are complete, move the machine with as little delay as possible.

❷ Immediately reinstall the machine and fill with ink.
Referring to the Setup Guide, reinstall the machine and carry out ink-filling and other preparations. When filling with ink, you use the SOL INK cleaning cartridges again. The ink mode cannot be changed.

Chapter 5

Feature Reference

5-1 Pausing or Canceling Output

Canceling Output Before It Finishes

Procedure

1. Press PAUSE.
2. Hold down SET UP for one second or longer.
3. Stop sending output data from the computer.

Description

PAUSE pauses output.
Pressing PAUSE a second time here resumes printing, but a horizontal stripe is produced at the location where printing was stopped. We do not recommend resuming printing.

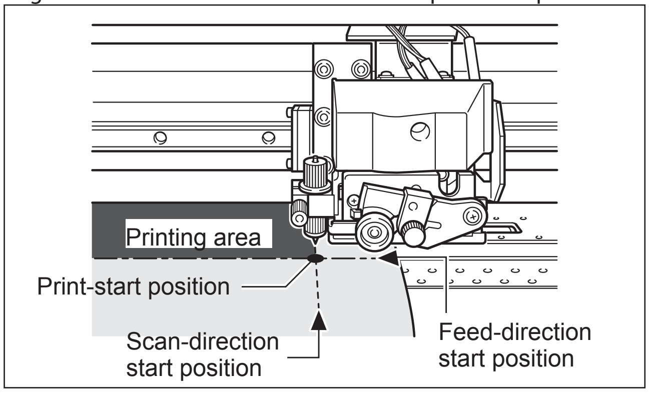
5-2 Setting the Print-start Position

Setting the Print-start Position

Procedure

❶ Use ◄ ► ▲ ▼ to move the cutting carriage.

Align the center of the blade with the new print-start position.

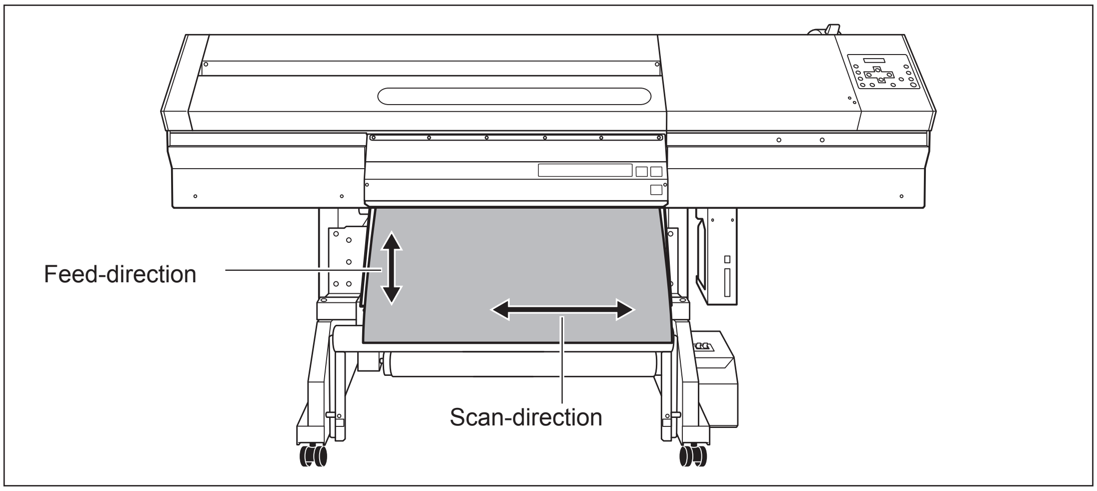


❷

```
W 600mm
B
```

Press BASE POINT.

This indicates that the printing-start position has been set.



Description

You can set the print-start position at any location you want. Note, however, that this setting returns to its default value after printing, and so it needs to be set separately for each page. When the start location has been set, BASE POINT lights up and screen displays the character "B" together with the print-possible width at the position.

This feature is also available when you're printing or cutting various test patterns, and can help you use media with less waste. Note, however, that the left and right positions are not restored to their defaults for test patterns.

Also, never use ▲ in the following cases.

○ When you're using the media take-up system
The media take-up system may pull the media with undue force, resulting in an error or malfunction.

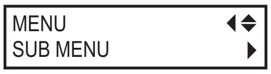
○ Before or after executing feed correction
Slackness in the roll media can make it impossible to obtain reliable correction results. Also, slackness in the roll media after feed correction may cause slippage in the media's movement distance during printing, resulting in horizontal stripes.

☞ P. 92, "Performing Feed Correction to Alleviate Horizontal Bands and the Like"

5-3 Accommodating Various Kinds of Media

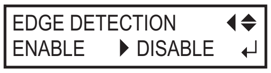
Using Transparent Media

Procedure

1. 

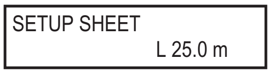
MENU
SUB MENU ▶

Press MENU.
Press ▼ several times .

2. 

EDGE DETECTION
ENABLE ▶ DISABLE ↵

Press ► twice.
Use ▲ ▼ to select "DISABLE."

3. 

SETUP SHEET
L 25.0 m

Press ENTER to enable the setting.
The settings are changed and the screen shown in the figure appears.

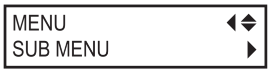
Description

This setting enables or disables detection of the leading and trailing edges of the media. It is normally set to "ENABLE." When transparent media is loaded, set it to "DISABLE." When this is set to "DISABLE," the "ROLL" and "TU" selections are available during media setup.

When [EDGE DETECTION] is set to "DISABLE," the machine cannot detect when media runs out. In such cases, printing operation does not stop when the media runs out, and there is a chance that the platen or the like may become soiled by ink or that ink may get inside and damage the machine. If media runs out while printing is in progress, immediately press PAUSE to quit printing.

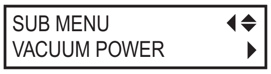
Preventing Media from Coming Loose

Procedure

1. 

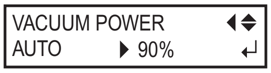
MENU
SUB MENU ▶

Press MENU.
Press ▼ several times.

2. 

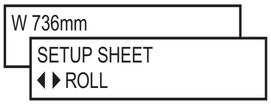
SUB MENU
VACUUM POWER ▶

Press ►.
Press ▼.

3. 

VACUUM POWER
AUTO ▶ 90% ↵

Press ►.
Use ▲ ▼ to set the value.
Press ENTER to enable the setting.

4. 

W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

The platen uses suction to grip the media and keep it stable. When media comes loose from the platen because it is warped or wrinkled, increasing the suction force may help correct the problem. Conversely, when the media is flimsy and cannot move smoothly, reducing the suction force may help.

When set to "AUTO," the suction force is automatically adjusted to the optimal level for the media width.

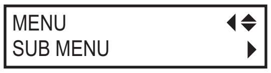
You can also make this setting on the computer. When you have made the setting on the computer, the computer's setting is used and the printer's setting is ignored.

Default Setting

[VACUUM POWER]: AUTO

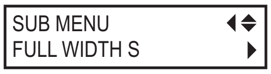
Speeding Up Printing for Narrow Media

Procedure

❶ 

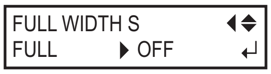
MENU ◄▲▼
SUB MENU ►

Press MENU.
Press ▼ several times.

❷ 

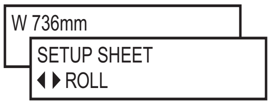
SUB MENU ◄▲▼
FULL WIDTH S ►

Press ►.
Press ▼ several times.

❸ 

FULL WIDTH S ◄▲▼
FULL ► OFF ↵

Press ►.
Use ▲ ▼ to select "SHEET" or "OFF."
Press ENTER to enable the setting.

❹ 

W 736mm
SETUP SHEET
◄► ROLL

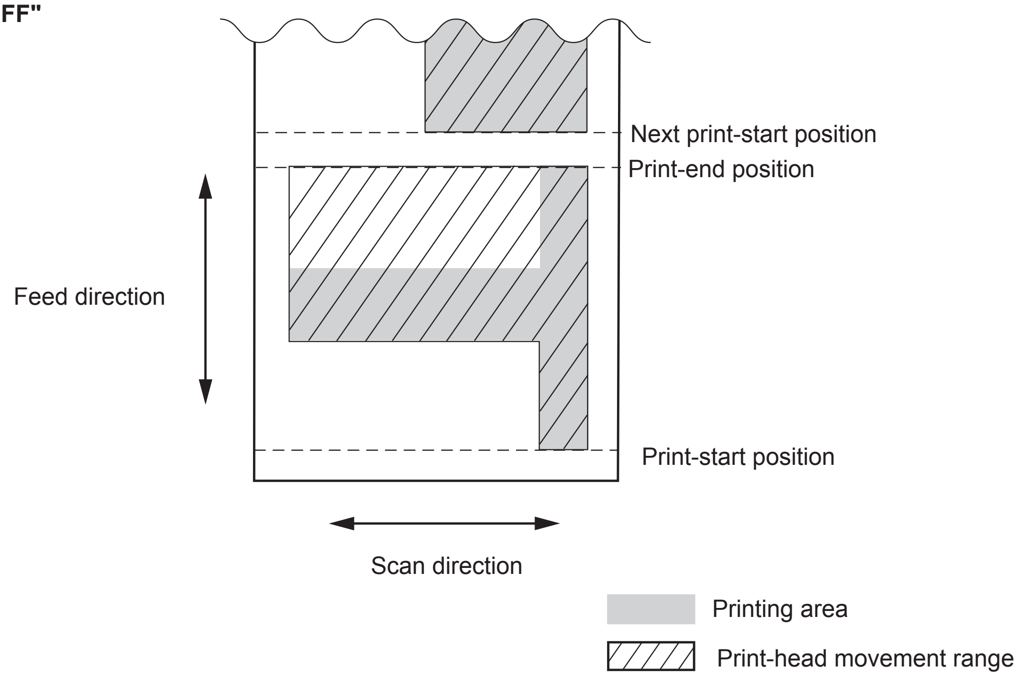
Press MENU.
Press ◄ to go back to the original screen.

Description

This shortens printing time by reducing the width of the print-head movement range to the minimum necessary. This is effective when the width of the media or the printing data is narrow.

"FULL" sets the movement range of the print heads to the maximum width of loadable media.
"SHEET" matches the range of print-head movement to the width of the media.
"OFF" matches the range of print-head movement to the printing data. Movement is limited to the minimum amount necessary, and this can be expected to yield the fastest printing.
Note, however, that the range of print-head movement is limited to the maximum scanning width that is printed. Also, the maximum scanning width printed is reset every time printing of a page finishes.

Range of print-head movement when set to "OFF"


Next print-start position
Print-end position
Feed direction
Print-start position
Scan direction
Printing area
Print-head movement range

Default Setting

[FULL WIDTH S]: FULL

Preventing Soiling of the Media and Dot Drop-out During Printing

Procedure

❶
```
MENU             ◀▲▼
SUB MENU           ▶
```
Press MENU.
Press ▼ several times.

❷
```
SUB MENU         ◀▲▼
PERIODIC CL.       ▶
```
Press ▶.
Press ▼ several times.

❸
```
PERIODIC CL .    ◀▲▼
NONE     ▶ 10 min  ↵
```
Press ▶.
Use ▲ ▼ to select a value from "5 min" to "990 min," or "PAGE."
Press ENTER to enable the setting.

❹
```
W 736mm
   SETUP SHEET
   ◀▶ROLL
```
Press MENU.
Press ◀ to go back to the original screen.

Description

Ink tends to collect on the surface of the heads when you use media prone to buildup of static charge, when the ambient temperature is low, or when the head height is set to "HIGH." Under some conditions, this ink may be transferred to the media or cause dot drop-out. Use this feature at such times. The ink buildup is removed as printing is performed.
When this is set to "PAGE," automatic cleaning is performed every time before printing starts.
When this is set to a value from "5 min" to "990 min," automatic cleaning is performed when the cumulative printing time reaches the value you set here.
When this is set to "NONE," no automatic cleaning is performed.
Using "PAGE" or a value from "5 min" to "990 min," results in longer printing times. Also, when this is set to a value from "5 min" to "990 min," printing pauses and so colors may be uneven.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

Default Setting

[PERIODIC CL.]: NONE

Printing Media That Warps Easily

Procedure

1. Change the setting for the [MEDIA CLAMP] menu item to [LONG].

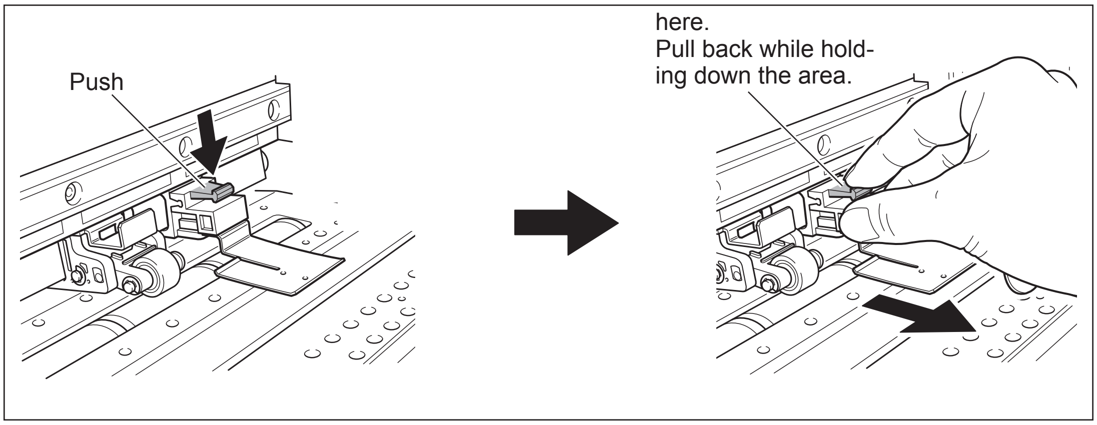
❶
```
MENU             ◀▲▼
MEDIA CLAMP        ▶
```
Press MENU.
Press ▲ several times.

❷
```
MEDIA CLAMP      ◀▲▼
 SHORT  ▶ LONG     ↵
```
Press ▶.
Use ▲ ▼ to select "LONG."
Press ENTER to enable the setting.

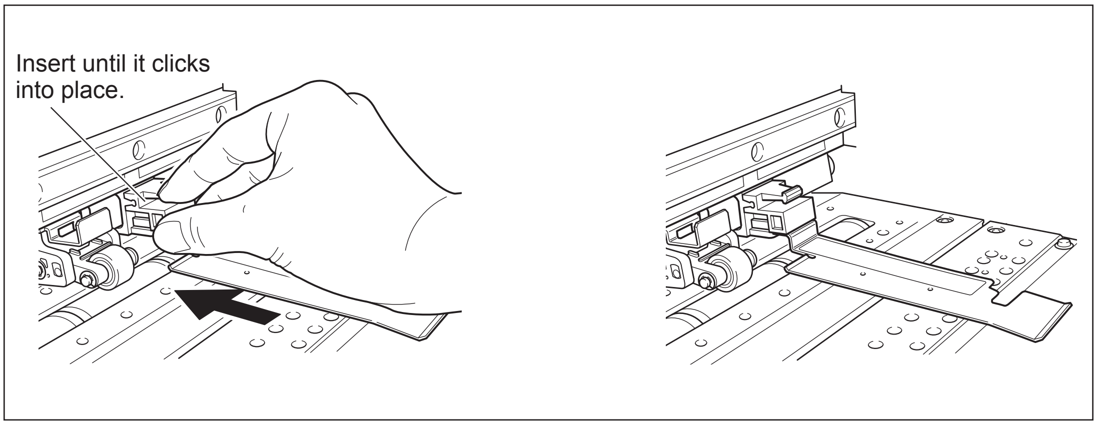
❸
```
W 736mm
   SETUP SHEET
   ◀▶ROLL
```
Press MENU to go back to the original screen.

2. Replace the short media clamps with the long ones.

❶ Remove the short media clamps.



❷ Attach the long media clamps.



Description

When you want to hold the media in place more securely, such as when you're printing media that warps easily, use the long media clamps to secure the edges of the media in place.
Note that when you're attaching the long media clamps, be sure to make the setting described above so that the media-cutoff operation cannot be performed. Performing media cutoff with the long media clamps installed may cause the long media clamps to touch the separating knife, resulting in damage or malfunction.
When the [MEDIA CLAMP] menu item is set to [LONG], media cutoff is not performed.

☞ P. 38, "Cutting Off the Media"

Default Setting

[MEDIA CLAMP] : LONG

How to Load Sheet Media

To load and use sheet media, follow the steps below.

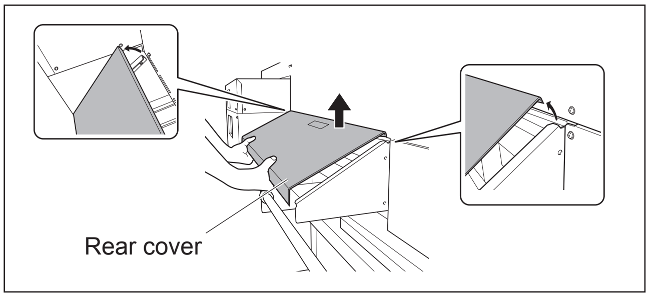
1. Load the sheet media.

➊ Measure the thickness of the sheet media.

If the measured value is 0.5 millimeters or more, increase the height of the print heads.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

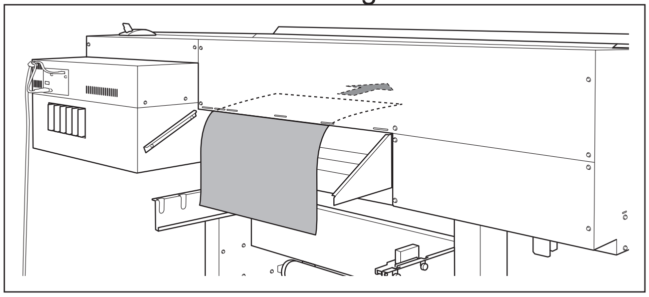
➋ Detach the rear cover.



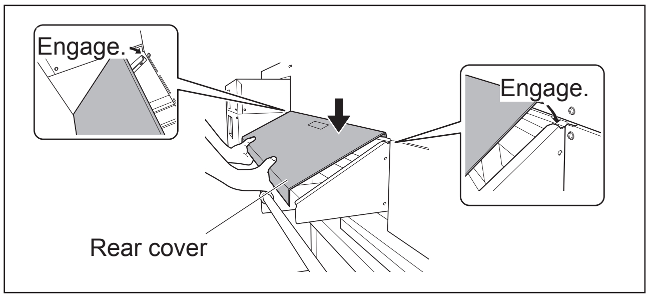
➌ If roll media is loaded, then remove it.

➍ Remove both shafts.

➎ Pass the sheet media through the machine.

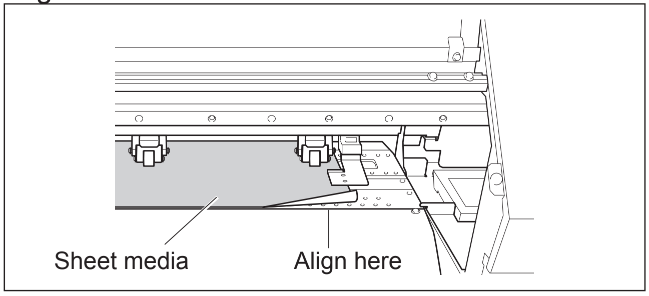


➏ Attach the rear cover.



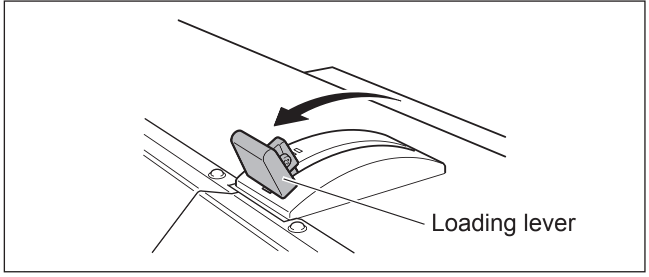
➐ Open the front cover.

⑧ Align the end of the sheet media with the location shown in the figure.


Sheet media
Align here

⑨ Pull back the loading lever.

The sheet media is secured in place.


Loading lever

⑩ If you're performing printing, attach the media clamps.

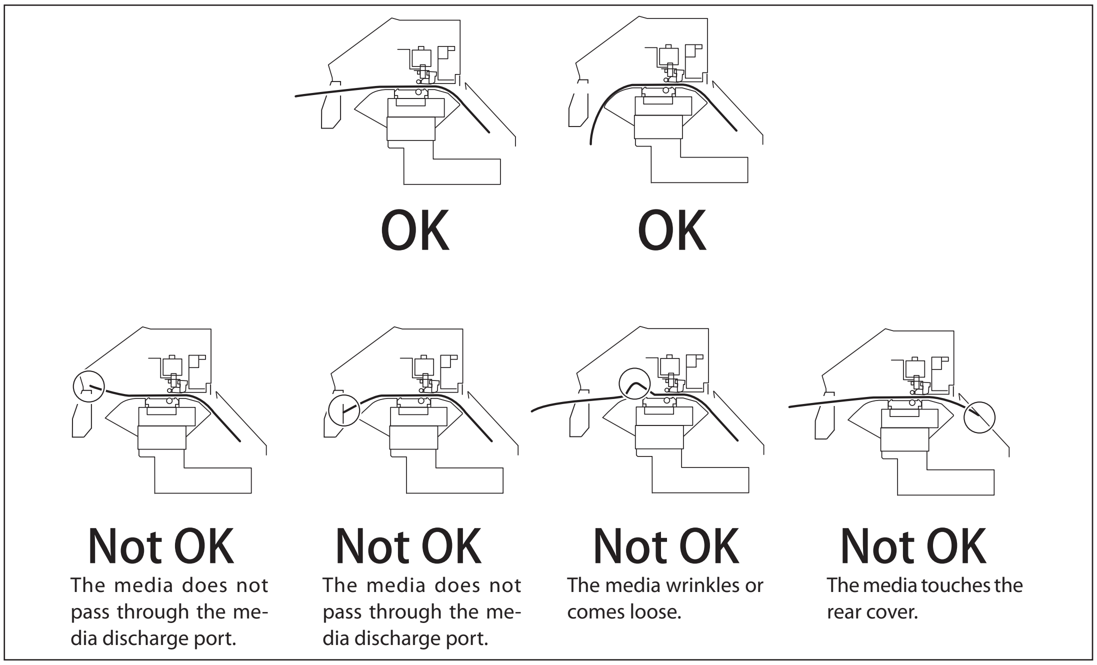
However, if the thickness of the sheet media is 0.5 millimeters or more, leave the media clamps unattached. Otherwise the print heads may strike the media clamps, resulting in malfunction or other problems.

2. Make sure that media feed is stable.

If any of the situations described below takes place, problems such as the print heads striking the sheet media may occur, resulting in malfunction or the like. Reload the sheet media. If the problem persists, the sheet media cannot be used.

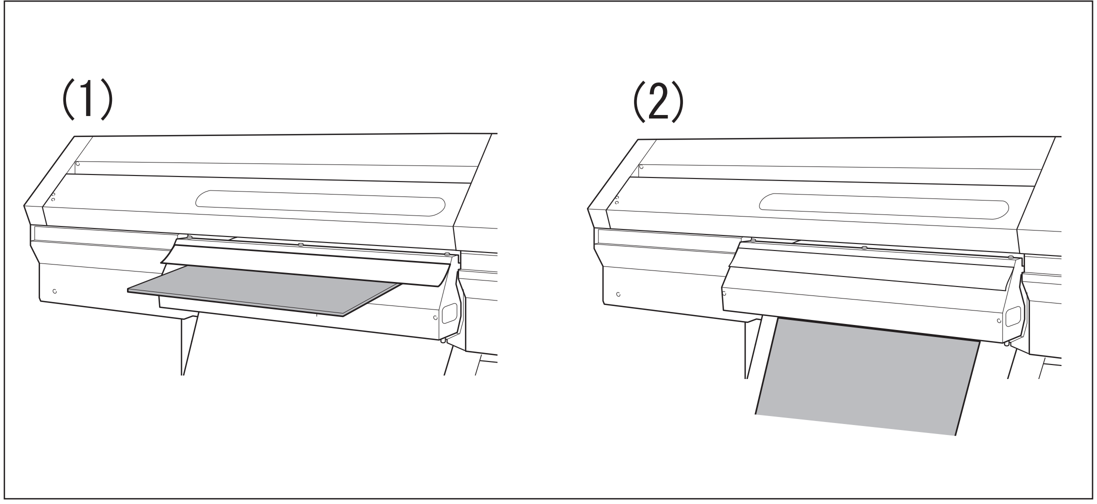
○ The sheet media does not pass through the media discharge port.
○ The sheet media wrinkles or comes loose from the platen.
○ The sheet media touches the rear cover.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable," p 138, "Conditions for usable Media"


OK
OK
Not OK
The media does not pass through the media discharge port.
Not OK
The media does not pass through the media discharge port.
Not OK
The media wrinkles or comes loose.
Not OK
The media touches the rear cover.

❶ Press and hold ▼.

Hold down until the print-end position reaches the platen.



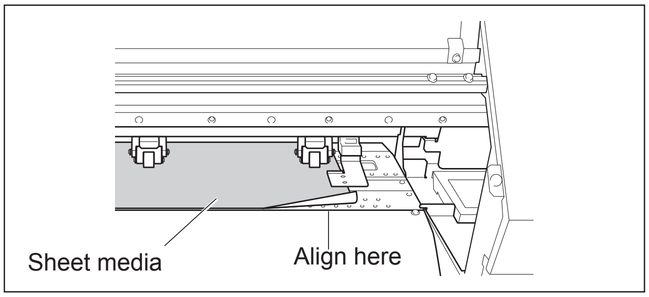
For media that passes through the media discharge port of (1), be sure to comply with the following. Otherwise problems such as the print heads striking the sheet media may occur, resulting in malfunction or the like.

○ Never use the media clamps.
○ Increase the height of the print heads.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

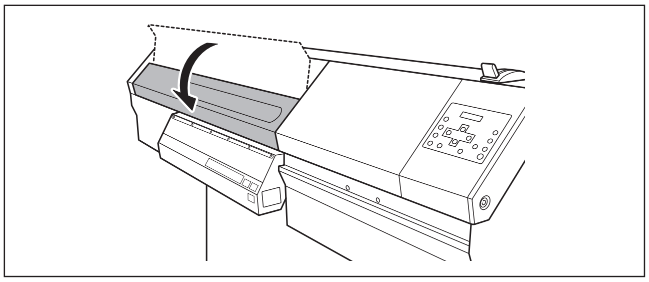
❷ Press and hold ▲.

Hold down until the end of the sheet media reaches the location shown in the figure.



3. Get ready to receive the data from the computer.

❶ Close the front cover.



❷

SETUP SHEET
◄► PIECE

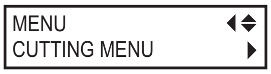
Use ◄ ► to select "PIECE."
Press ENTER.

5-4 Changing How the Printer Operates

Executing Environment Matching Automatically

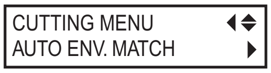
Procedure

1


MENU
CUTTING MENU

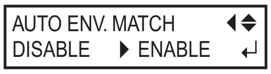
Press MENU.
Press ▲ several times.

2


CUTTING MENU
AUTO ENV. MATCH

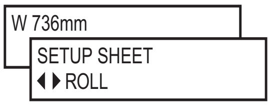
Press ►.
Press ▲.

3


AUTO ENV. MATCH
DISABLE ▶ ENABLE

Press ►.
Use ▲ ▼ to select "ENABLE."
Press ENTER to enable the setting.

4


W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

This setting enables or disables the feature for automatic adjustment to optimize the state of the machine to the environment where it is used (temperature and humidity). Performing automatic adjustment can reduce misalignment in the scanning direction (the direction of carriage movement) during printing or cutting. It is normally set to "ENABLE."

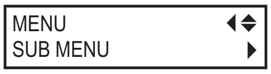
Default Setting

[AUTO ENV. MATCH]: ENABLE

Determining What Happens When Ink Runs Out

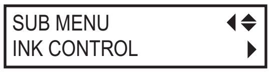
Procedure

1


MENU
SUB MENU

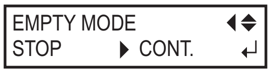
Press MENU.
Press ▼ several times.

2


SUB MENU
INK CONTROL

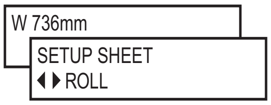
Press ►.
Press ▲ twice.

3


EMPTY MODE
STOP ▶ CONT.

Press ► twice.
Use ▲ ▼ to make the setting.
Press ENTER to enable the setting.

4


W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

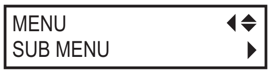
This lets you change, according to your purpose, the operation that takes place when an ink cartridge is empty.
"STOP" immediately pauses operation when a cartridge becomes empty. Because pausing printing in progress may make colors uneven, it is best to ensure a sufficient amount of remaining ink before you begin printing.
"CONT." (continue) is a mode in which operation is not automatically stopped. When a cartridge becomes empty, a warning beep sounds but printing doesn't stop. To replace the cartridge, you must either wait until printing ends or press PAUSE to pause printing. Note that operation does not stop even if ink runs out completely.

Default Setting

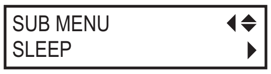
[EMPTY MODE]: STOP

Setting the Interval until Activation of the Sleep Mode

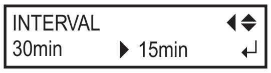
Procedure

1. 
MENU ◄⬍
SUB MENU ►

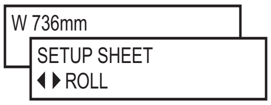
Press MENU .
Press ▼ several times.

2. 
SUB MENU ◄⬍
SLEEP ►

Press ► .
Press ▲ several times.

3. 
INTERVAL ◄⬍
30min ► 15min ↵

Press ► twice.
Use ▲ ▼ to make the setting.
Press ENTER to enable the setting.

4. 
W 736mm
SETUP SHEET
◄► ROLL

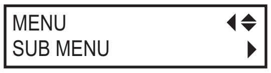
Press MENU .
Press ◄ to go back to the original screen.

Default Setting

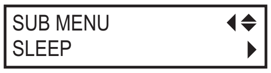
[INTERVAL]: 30min

Deactivating the Sleep Mode

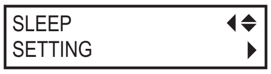
Procedure

1. 
MENU ◄⬍
SUB MENU ►

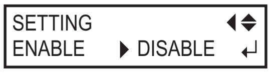
Press MENU .
Press ▼ several times.

2. 
SUB MENU ◄⬍
SLEEP ►

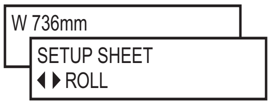
Press ► .
Press ▲ several times.

3. 
SLEEP ◄⬍
SETTING ►

Press ► .
Press ▼ .

4. 
SETTING ◄⬍
ENABLE ► DISABLE ↵

Press ► .
Use ▲ ▼ to select "DISABLE."
Press ENTER to enable the setting.

5. 
W 736mm
SETUP SHEET
◄► ROLL

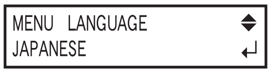
Press MENU .
Press ◄ to go back to the original screen.

Default Setting

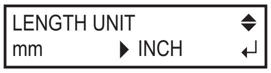
[SETTING]: ENABLE

Changing the Menu Language and the Units of Measurement

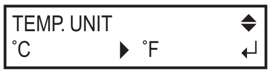
Procedure

❶

MENU LANGUAGE ⬍
JAPANESE ↵

Hold down MENU and switch on the sub power.
Use ▲ ▼ to select the display (menu) language.
Press ENTER.

❷

LENGTH UNIT ⬍
mm ▶ INCH ↵

Use ▲ ▼ to select the measurement unit for length.
Press ENTER.

❸

TEMP. UNIT ⬍
˚C ▶ ˚F ↵

Use ▲ ▼ to select to the measurement unit for temperature.
Press ENTER.

Description

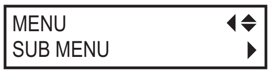
This sets the language and units of measurement displayed on the printer's screen.

Default Setting

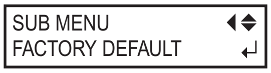
[MENU LANGUAGE]: ENGLISH
[LENGTH UNIT]: mm
[TEMP. UNIT]: ˚C

Returning All Settings to Their Initial Values

Procedure

❶

MENU ◀⬍
SUB MENU ▶

Press MENU.
Press ▼ several times.

❷

SUB MENU ◀⬍
FACTORY DEFAULT ↵

Press ►.
Press ▼ several times.
Press ENTER to execute.

Description

This menu item returns all settings to the same as their factory defaults. However, the settings for [MENU LANGUAGE], [LENGTH UNIT], and [TEMP. UNIT] are not returned to the factory defaults.

5-5 Optimizing Printing to Match Media Thickness

Adjusting Head Height to Match Media Thickness

Procedure

❶
MENU ◀▲▼
HEAD HEIGHT ▶

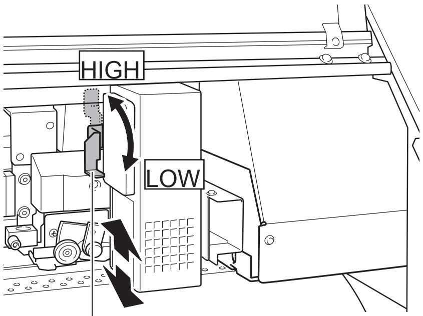
Press MENU.
Press ▼ several times.

❷
HEAD HEIGHT ◀
LOW ▶ LOW ↵

Press ▶.

❸ Open the front cover.
Move the lever to adjust the height of the head.

Moving the lever to "HIGH" makes a warning beep sound twice. Moving it to "LOW" makes the warning beep sound once.



Height-adjustment lever
Move firmly, until it stops.

❹
MENU ◀▲▼
HEAD HEIGHT ▶

Close the front cover.

The print heads return to their original position and the screen shown in the figure appears.

❺
W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◀ to go back to the original screen.

Description

Depending on the media, the media may be thick, or may wrinkle or come loose from the platen during printing, increasing the chance of contact with the print heads. When you're using such media, set [HEAD HEIGHT] to "HIGH."
Printing quality when [HEAD HEIGHT] is set to "HIGH" may be coarser or otherwise lower than when set to "LOW." If this happens, refer to the pages indicated below.

☞ P. 80, "Preventing Soiling of the Media and Dot Drop-out During Printing," p. 89, "Correcting for Misalignment in Bidirectional Printing," p. 90, "Correcting for Misalignment in Bidirectional Printing More Precisely"

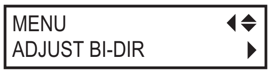
Default Setting

[HEAD HEIGHT]: LOW

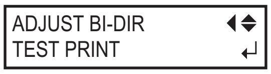
Correcting for Misalignment in Bidirectional Printing

Procedure

1. Print a test pattern.

❶

MENU ◀↕
ADJUST BI-DIR ▶

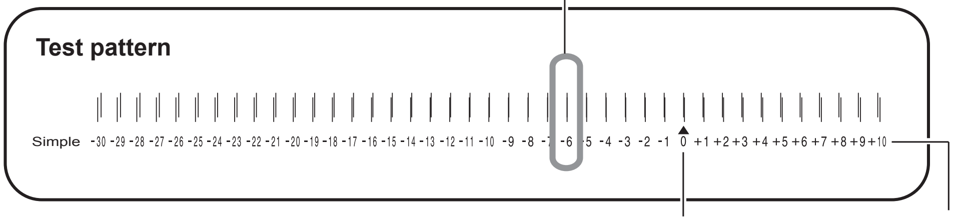
Press MENU.
Press ▼.

❷

ADJUST BI-DIR ◀↕
TEST PRINT ↵

Press ►.
Press ENTER to start printing.

2. Read the correction values from the test pattern.

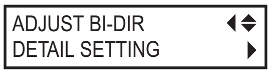
Choose the value that produces the least misalignment.



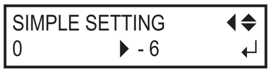
Current correction value

Correction-value scale

3. Enter the correction values that you read.

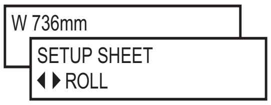
❶

ADJUST BI-DIR ◀↕
DETAIL SETTING ▶

Press ▼.

❷

SIMPLE SETTING ◀↕
0 ▶ - 6 ↵

Press ►.
Use ▲ ▼ to set the correction values.
Press ENTER to enable the setting.

4. Go back to the original screen.


W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

The bidirectional-printing mode (in which the heads perform printing during both their outbound pass and return pass) offers the advantage of being able to shorten printing times, but subtle misalignment occurs during the outbound and return passes. The procedure to correct this and eliminate misalignment is bidirectional correction. This misalignment varies according to the head height and the thickness of the media, so we recommend performing correction to match the media you're using.

This settings also serves to correct for misalignment of the printing and cutting positions. In such cases, check or adjust this setting.

☞ P. 100, "Correcting Misalignment of the Printing and Cutting Positions," p. 105, "Correcting Misalignment for Printing and Cutting When Using Crop Marks"

Correcting for Misalignment in Bidirectional Printing More Precisely

Procedure

1. Print a test pattern.

❶

```
MENU          ◀⬍
ADJUST BI-DIR   ▶
```

Press MENU.
Press ▼.

❷

```
ADJUST BI-DIR  ◀⬍
DETAIL SETTING  ▶
```

Press ▶.
Press ▲.

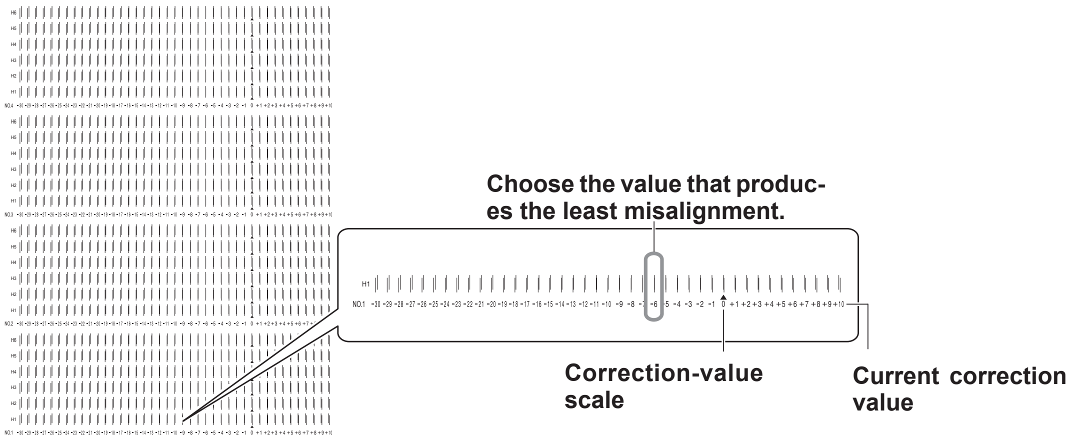
❸

```
DETAIL SETING  ◀⬍
TEST PRINT      ↵
```

Press ▶.
Press ENTER to start printing.

2. Read the correction values from the test pattern.

Test pattern


Choose the value that produces the least misalignment.
H1
NO.1
Correction-value scale
Current correction value

If the Printing-test Results Are Difficult to Interpret
Examine the results from different angles in a well-lighted location. Take advantage of reflected light to enable visual checking. We recommend performing the printing test on transparent or silver-colored media.

3. Enter the correction values that you read.

Enter the corresponding correction values for H1 through H3.

❶

```
DETAIL SETTING ◀⬍
SETTING NO.1    ▶
```

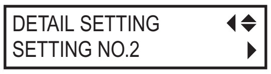
Press ▼.

❷

```
H1    H2    H3 ◀⬍▶
 0     0     0   ↵
         ⬍  ◀  ▶
H4    H5    H6  ◀⬍
 0     0     0   ↵
```

Press ▶.
Use ◀ ▶ to select. Use ▲ ▼ to set the correction value.
Press ENTER to finish making the settings for [SETTING NO.1].

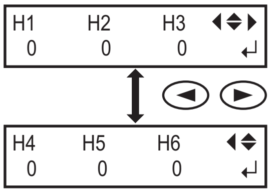
③



DETAIL SETTING ◀⬍
SETTING NO.2 ▶

Press ▼ .

④

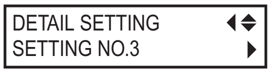


H1 H2 H3 ◀⬍▶
0 0 0 ↵

H4 H5 H6 ◀⬍
0 0 0 ↵

Press ▶.
Use ◀ ▶ to select. Use ▲ ▼ to set the correction value.
Press ENTER to finish making the settings for [SETTING NO.2].

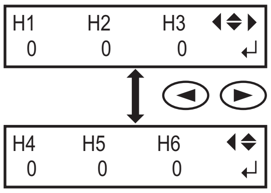
⑤



DETAIL SETTING ◀⬍
SETTING NO.3 ▶

Press ▼.

⑥

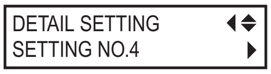


H1 H2 H3 ◀⬍▶
0 0 0 ↵

H4 H5 H6 ◀⬍
0 0 0 ↵

Press ▶.
Use ◀ ▶ to select. Use ▲ ▼ to set the correction value.
Press ENTER to finish making the settings for [SETTING NO.3].

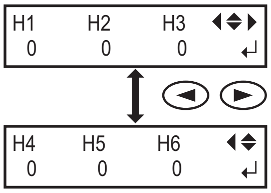
⑦



DETAIL SETTING ◀⬍
SETTING NO.4 ▶

Press ▼.

⑧

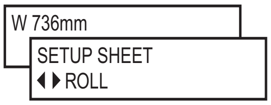


H1 H2 H3 ◀⬍▶
0 0 0 ↵

H4 H5 H6 ◀⬍
0 0 0 ↵

Press ▶.
Use ◀ ▶ to select. Use ▲ ▼ to set the correction value.
Press ENTER to finish making the settings for [SETTING NO.4].

4. Go back to the original screen.



W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◀ to go back to the original screen.

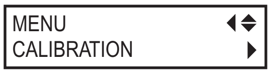
Description

This corrects, for each head, the minute misalignment that occurs in the bidirectional-printing mode. When further correction is required, such as when adjustment made using [SIMPLE SETTING] does not enhance printing, use [DETAIL SETTING] to make corrections for each head.

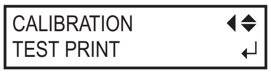
Performing Feed Correction to Alleviate Horizontal Bands and the Like

Procedure

1. Print a test pattern.

❶ 
MENU ◄▲▼
CALIBRATION ►

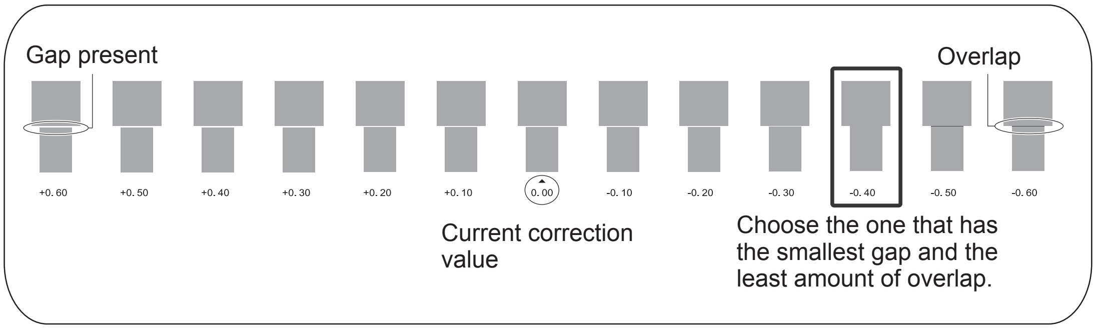
Press MENU.
Press ▼ several times.

❷ 
CALIBRATION ◄▲▼
TEST PRINT ↵

Press ►.
Press ENTER to start printing.

2. Read the correction values from the test pattern.

In the printing example shown below, "-0.40" becomes the correction value.

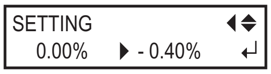


Current correction value

Choose the one that has the smallest gap and the least amount of overlap.

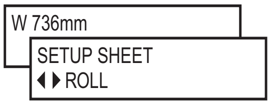
Test pattern

3. Enter the correction values that you read.


SETTING ◄▲▼
0.00% ► - 0.40% ↵

Press ▲.
Press ►.
Use ▲ ▼ to make the setting for the correction value.
Press ENTER to enable the setting.

4. Go back to the original screen.


W 736mm
SETUP SHEET
◄► ROLL

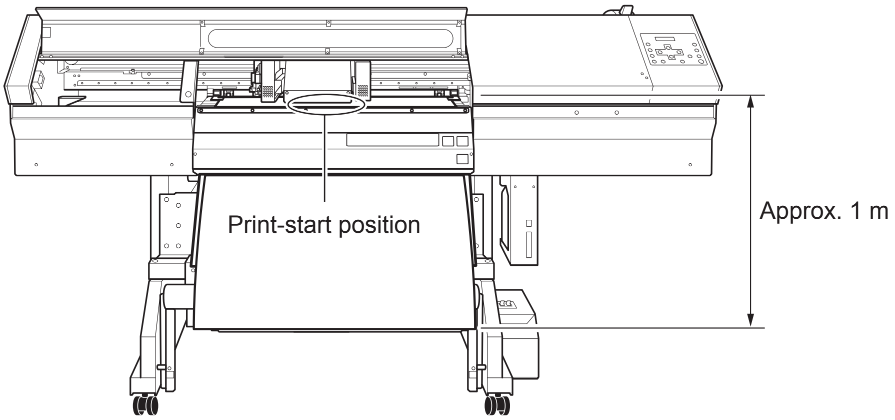
Press MENU.
Press ◄ to go back to the original screen.

Description

The movement distance of media experiences subtle changes due to the thickness of the media . When the movement distance becomes discrepant, horizontal stripes are more likely to occur during printing. We recommend performing correction to match the media you're using and the media heating system. Also, perform the actual printing in an operating environment identical to that used for the test pattern.

To make the setting for the correction value even more accurate, we recommend carrying out the following before printing the test pattern.

○ After loading the media, use ▼ to feed out the media by about one meter."
○ Set the print-start position near the center of the media.
☞ P. 77, "Setting the Print-start Position"



Note, however, that you can also make this setting on the computer (by, for example, choosing the media type in the software RIP you are using). When you have made the setting on the computer, the computer's setting is used and the printer's setting is ignored.

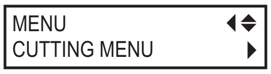
Default Setting

[SETTING]: 0.00%

Performing Distance Correction During Cutting

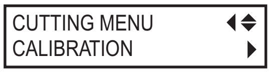
Procedure

①


MENU
CUTTING MENU

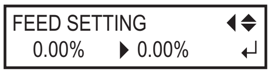
Press MENU.
Press ▲ several times.

②


CUTTING MENU
CALIBRATION

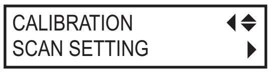
Press ►.
Press ▼ twice.

③


FEED SETTING
0.00% ▶ 0.00%

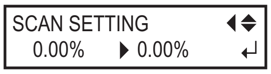
Press ► twice.
Use ▲ ▼ to make the setting for the correction value.
Press ENTER to enable the setting for [FEED SETTING].

④


CALIBRATION
SCAN SETTING

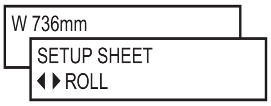
Press ◄.
Press ▼.

⑤


SCAN SETTING
0.00% ▶ 0.00%

Press ►.
Use ▲ ▼ to make the setting for the correction value.
Press ENTER to enable the setting for [SCAN SETTING].

⑥


W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

The movement distance for the media changes subtly depending on the media's thickness. This means that the length of a line when cut may differ from the length setting in the data. You enter a correction value when you want to align the lengths of cut lines precisely.

When performing printing followed immediately by cutting, be sure to set this to "0.00."

Default Setting

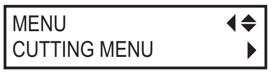
[FEED SETTING]: 0.00%
[SCAN SETTING]: 0.00%

5-6 Making Various Adjustments for Cutting

Making the Cutting Conditions Set on the Machine Take Precedence

Procedure

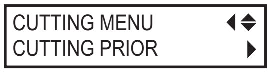
1



MENU ◀⇕
CUTTING MENU ▶

Press MENU.
Press ▲ several times.

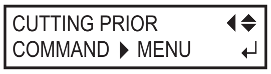
2



CUTTING MENU ◀⇕
CUTTING PRIOR ▶

Press ►.
Press ▲ twice.

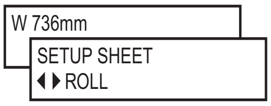
3



CUTTING PRIOR ◀⇕
COMMAND ▶ MENU ↵

Press ►.
Use ▲ ▼ to select "MENU."
Press ENTER to enable the setting.

4



W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

You can also make the settings for the cutting conditions using the computer. By default, the settings made with the computer take priority. To make the cutting conditions set on the machine take priority, either turn off the settings of the computer or make the setting described above.

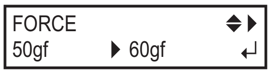
Default Setting

[CUTTING PRIOR]: COMMAND

Fine-tuning the Cutting Conditions

Procedure

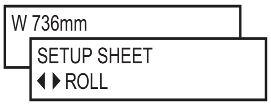
1



FORCE ⇕▶
50gf ▶ 60gf ↵

Press ▼.
Use ◄ ► to choose the cutting condition you want to set.
Use ▲ ▼ to enter the value.

2



W 736mm
SETUP SHEET
◀▶ ROLL

Press ENTER to enable the setting and go back to the original screen.

Description

This enables you to check and verify the settings for the cutting conditions using cutting-test results.
☞ P. 45, "Performing a Cutting Test"

[FORCE]: This sets the force (pressure) of the blade.
[SPEED]: This sets the speed of cutting.
[OFFSET]: This makes the blade-offset setting for the blade. Enter the listed offset value for the blade. (The offset value for the included blade is 0.25 mm.)
[UP-SPEED]: This sets the blade's up speed during cutting (the speed at which the blade travels when it moves to the next cutting line after cutting one cutting line). If the media comes loose during no-load feed and the blade damages the surface of the media, reduce the speed.

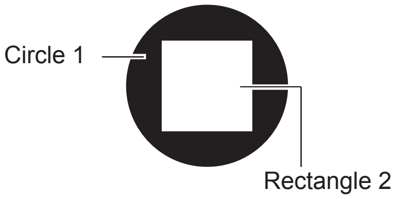
Evaluating the Results of a Cutting Test

❶ Check the shape of the test pattern.

The cut shape is distorted.

Reduce the cutting speed.

❷ Peel off circle 1.



Rectangle 2 also peels off.

Increase the blade force.

Some uncut areas remain.

Reduce the cutting speed.

❸ Peel off rectangle 2.

The blade should leave faint traces on the backing paper.

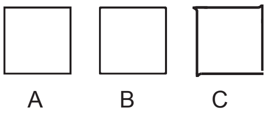
The blade trace is indistinct.

Increase the blade force.

The blade trace is too deep and cuts into the backing paper.

Reduce the blade force.

❹ Check the shape of rectangle 2.



A. The shape is correct.

B. The corners are rounded.

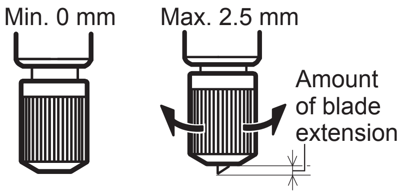
Increase the amount of blade offset.

C. The corners have "horns."

Reduce the amount of blade offset.

Adjusting the Cutting-in Amount

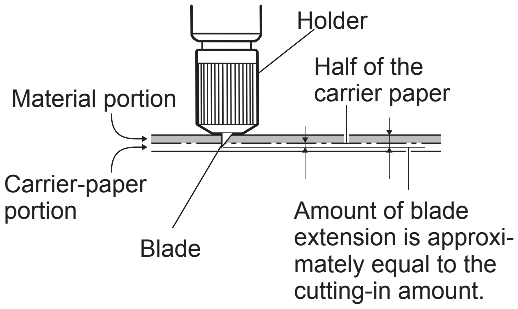
When you want to perform accurate and fine adjustment of the cutting-in amount, such as when cutting media with thin carrier paper, you can obtain good results by adjusting the tip of the blade.Turn the cap portion of the blade holder to adjust the amount of blade extension. Each indicator tick corresponds to 0.1 millimeters, and adjustment for 0.5 millimeters can be made by rotating the cap one full turn.



Rough Estimate for the Amount of Blade Extension

Use the following dimension as a rough estimate for setting the amount of blade extension.

$$\textbf{Amount of blade extension} = \textbf{Thickness of the material portion} + \frac{\textbf{Thickness of the carrier paper}}{\textbf{2}}$$


Holder
Half of the carrier paper
Material portion
Carrier-paper portion
Blade
Amount of blade extension is approximately equal to the cutting-in amount.

Note that making the amount of blade extension too small may cause the end of the cap for the blade holder to touch and damage the printed surface. It's important to be especially careful about this when you're using media that has poor ink-adhesion properties.

Adjusting for When Cutting the Printed Surface

Procedure

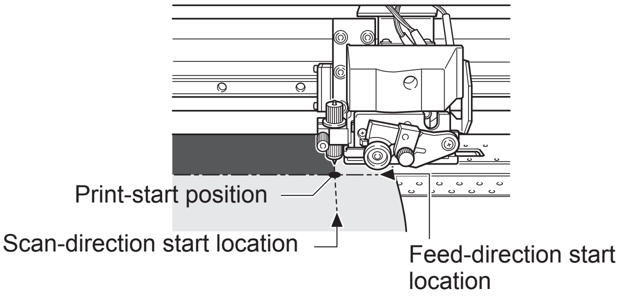
1. Decide on the starting position for cutting-test printing.

❶ Load the media.

☞ P. 31, "Loading Media", p. 84, "How to Load Sheet Media"

❷ Use ◄ ► ▲ ▼ to move the cutting carriage.

You can perform cutting-test printing at any location you want.


Print-start position
Scan-direction start location
Feed-direction start location

❸ Press BASE POINT

2. Execute the [CUT TEST PRINT] menu item.

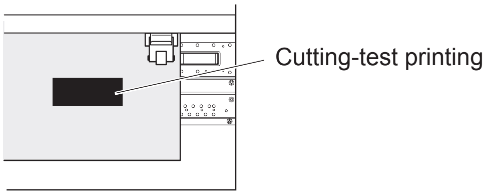
❶

```
MENU          ◄♦
CUT TEST PRINT ↵
```

Press MENU.
Press ▲.

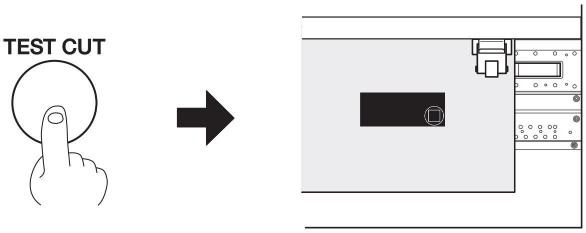
❷
```
PERFORMING
     TEST PRINT
```

Press ENTER
Printing like that shown in the figure is performed.



```
MENU             ◀⇕
CUT TEST PRINT   ↵
```

3. Perform a cutting test overtop the cutting-test print pattern.



4. Check the results of the cutting test and make adjustments.

❶ Open the front cover.

❷ Check the results of the cutting test and make adjustments.

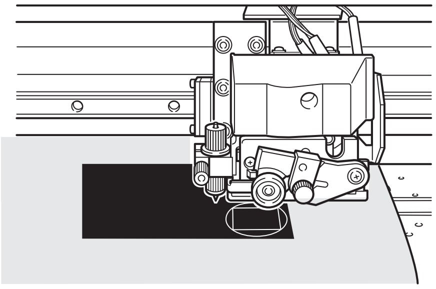
☞ P. 95, "Fine-tuning the Cutting Conditions," p. 96, "Adjusting the Cutting-in Amount"

❸ Close the front cover.

5. Check the results of the cutting test and make adjustments.

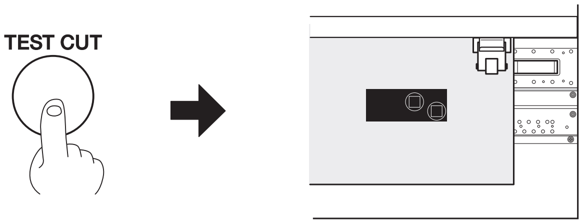
❶ Use ◄ ► ▲ ▼ to move the cutting carriage.

Align the center of the blade with a location where you can perform a cutting test overtop the cutting-test print pattern.



❷ Press BASE POINT

❸ Press TEST CUT



❹ Open the front cover.

❺ Check the results of the cutting test.
Adjustment is complete when optimal results are obtained. If further adjustment is needed, go back to step 4.-❷ and fine-tune the adjustment.

Description

Hardened ink is thick. This means that the cutting conditions when you're cutting a printed surface are different from the cutting conditions when you're cutting a surface that hasn't been printed. When you're cutting a printed surface, use this [CUT TEST PRINT] to adjust the cutting conditions.

Note: These adjustments are general suggestions. Their accuracy is not assured.

Preventing Pulling of the Media with Undue Force When Performing Cutting Only

Procedure

❶	MENU ◄⬍ CUTTING MENU ►	Press MENU. Press ▲ several times.
❷	CUTTING MENU ◄⬍ PREFEED ►	Press ►. Press ▲ several times.
❸	PREFEED ◄⬍ DISABLE ►ENABLE ↵	Press ►. Use ▲ ▼ to select "ENABLE." Press ENTER to enable the setting.
❹	W 736mm SETUP SHEET ◄►ROLL	Press MENU. Press ◄ to go back to the original screen.

Description

When you're performing cutting only, it may be convenient to set this feature to "ENABLE." This feeds out media according to the size of the data sent from the computer before performing cutting. This makes it unnecessary to turn the media flanges by hand to feed out media every time you perform cutting. Note, however, that this feeds out media even when you're performing printing only, so set it to "DISABLE" when not needed.

Correcting Misalignment of the Printing and Cutting Positions

Procedure

1. Check the setting for the [AUTO ENV. MATCH] menu item.

Make sure the [AUTO ENV. MATCH] menu item is set to "ENABLE."

☞ P. 85, "Executing Environment Matching Automatically"

2. Execute the [ADJUST BI-DIR] menu item.

❶ Load the media.

☞ P. 31, "Loading Media," p. 82, "How to Load Sheet Media"

❷ Perform bidirectional adjustment.

☞ P. 89, "Correcting for Misalignment in Bidirectional Printing," p. 90, "Correcting for Misalignment in Bidirectional Printing More Precisely"

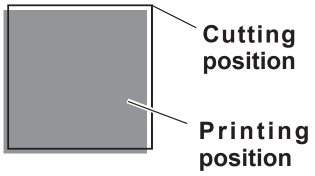
3. Print a test pattern and cut it.

❶
```
MENU           ◀⬍
CUTTING MENU    ▶
```
Press (MENU).
Press (▲) several times.

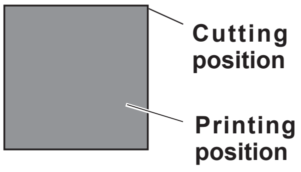
❷
```
CUTTING MENU   ◀⬍
PRINT - CUT ADJ. ▶
```
Press (►).

❸
```
PRINT - CUT ADJ. ◀⬍
TEST PRINT        ↵
```
Press (►).
Press (ENTER).

The test pattern is printed at three locations: at the two edges and in the center. When adjustment is needed, go on to the steps below.



Cutting position and printing position are misaligned.

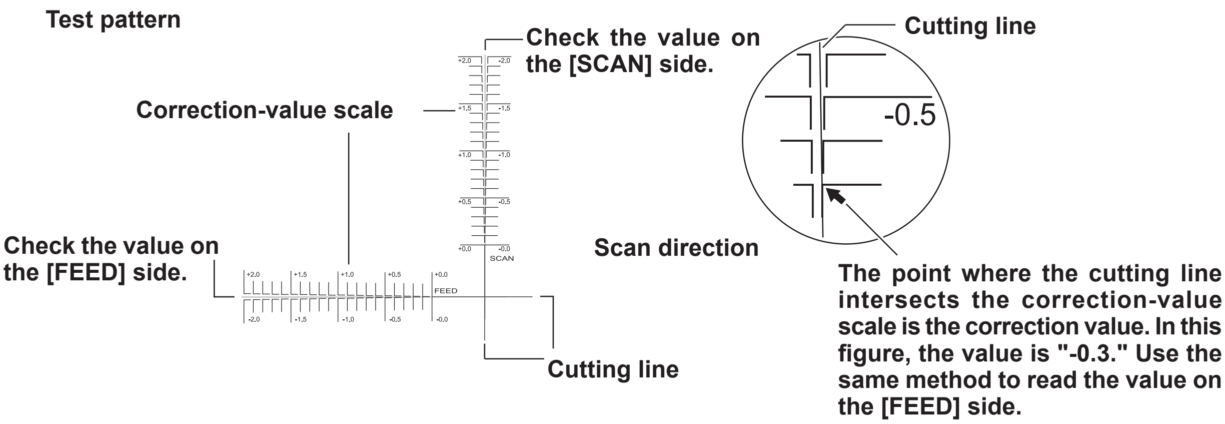


Cutting position and printing position are aligned.

4. Print and cut a test pattern for setting the correction values.

```
PRINT - CUT ADJ. ◀⬍
TEST PRINT 2      ↵
```
Press (▲).
Press (ENTER) to execute

5. From the test pattern, read the value at the location.


Test pattern
Check the value on the [SCAN] side.
Cutting line
Correction-value scale
-0.5
Check the value on the [FEED] side.
Scan direction
SCAN
FEED
Cutting line

The point where the cutting line intersects the correction-value scale is the correction value. In this figure, the value is "-0.3." Use the same method to read the value on the [FEED] side.

6. Enter the correction value you read.

❶
PRINT - CUT ADJ. ◀⬍
SETTING ▶

Press ▲.

❷
F :- 0.30 ▶ - 0.30mm
S : 0.00 ▶ - 0.20mm ↵

Press ►.
Use ▲ ▼ to set the correction value for [F] (the feed direction).
Use ◄ ► to set the correction value for [S] (the scanning direction).
Press ENTER to enable the setting.

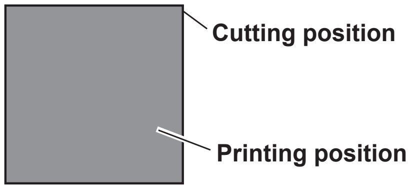
❸
PRINT - CUT ADJ. ◀⬍
SETTING ▶

Press MENU.

7. Check the results of adjustment.

PRINT - CUT ADJ. ◀⬍
TEST PRINT ↵

Press ▲.
Press ENTER to execute.
If the printing and cutting lines are aligned, adjustment is complete.
If further adjustment is needed, go back to step 6. and fine-tune the adjustment.


Cutting position
Printing position

Cutting position and printing position are aligned.

Description

You perform this when printing followed immediately by cutting yields positioning for printing and cutting that is slightly misaligned. You print alignment marks, perform detection of the printed marks, and correct the discrepancy.
Subtle misalignment between the printing and cutting positions may occur due to the thickness of the media or the head height. We recommend making correction to match the media you're using.

Default Setting

[F] (feed direction): 0.00 mm
[S] (scanning direction): 0.00 mm

5-7 Performing Printing and Cutting Separately

To Perform Printing and Cutting Separately

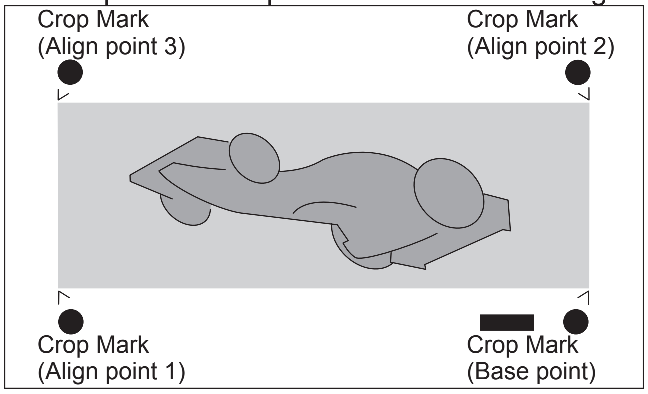
When you remove printed media and then reload it and perform cutting, you carry out alignment to prevent misalignment of the printing results and the cut lines. You do this at times such as when, for example, you perform lamination or other processing after printing, then reload the media and perform cutting. At such times, you perform printing with crop marks. You can perform automatic alignment with detection of the printed crop marks when you perform cutting.

Printing with Crop Marks

Use your software RIP to make the settings for printing crop marks. For information on how to make the setting, refer to the documentation for the software RIP you're using.

Alignment marks and symbols drawn using a graphics program cannot be used as crop marks.

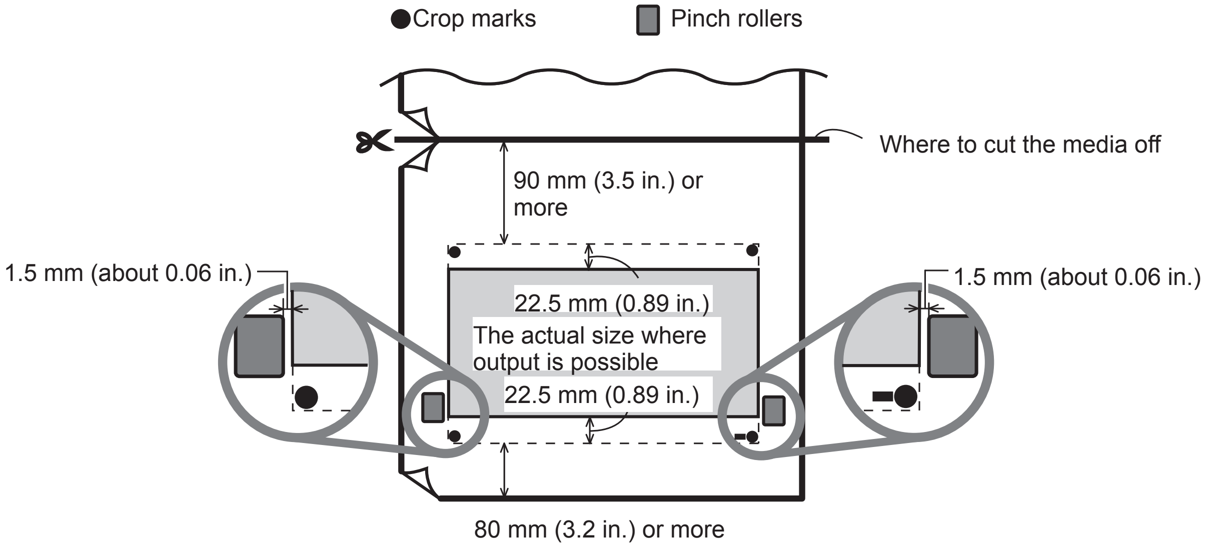
The crop marks are printed as shown in the figure.


Crop Mark
(Align point 3)
Crop Mark
(Align point 2)
Crop Mark
(Align point 1)
Crop Mark
(Base point)

Media Sizes Allowing Automatic Crop Mark Detection

When you are printing with crop marks, set a margin of at least 90 mm (3.5 in.) before the next print-start position.

You can set the margin value with the software RIP you're using. For information on how to make the setting, refer to the documentation for the software RIP you're using.

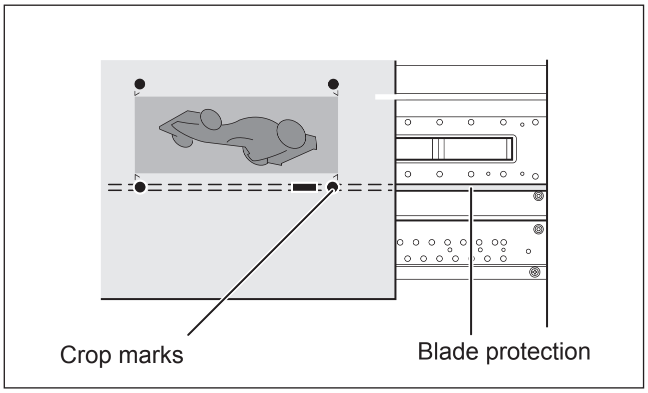

●Crop marks
Pinch rollers
Where to cut the media off
90 mm (3.5 in.) or more
1.5 mm (about 0.06 in.)
1.5 mm (about 0.06 in.)
22.5 mm (0.89 in.)
The actual size where output is possible
22.5 mm (0.89 in.)
80 mm (3.2 in.) or more

Aligning Automatically and Cutting

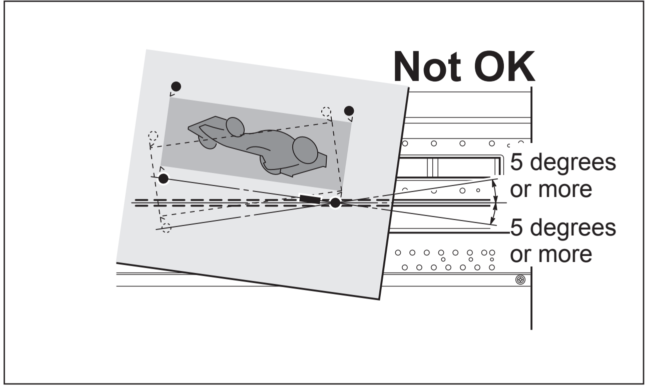
When you make the setting for reading crop marks when sending cutting data from the computer, alignment is performed with the presence or absence of crop marks determined automatically.
For information on how to make the setting, refer to the documentation for the software RIP you're using.

Procedure

❶ Load the media.

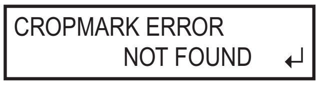


Angled no more than 5 degrees.
Otherwise alignment becomes impossible.



❷ Send the cutting data.
Alignment is performed automatically, then cutting starts.

If Automatic Alignment Cannot Be Performed



CROPMARK ERROR
NOT FOUND ↵

If the machine fails to detect the crop marks, the screen shown in the figure appears and operation stops. If this happens, press ENTER, then take action as follows.

❶ Reload the media, then send the data again.

❷ If this does not resolve the problem, then perform alignment manually.

☞ P. 104, "Aligning Manually and Cutting"

If the crop marks cannot be detected easily because of the effects of media warping or the like, then perform alignment manually. When you want to perform automatic alignment with lengthy media, we recommend performing output with the data separated into sizes that are as short as possible. With large sizes, error due to warping and the like increases, making smooth detection impossible.

To Quit Detection and Start Cutting

❶
```
CANCEL CROPMARK
      DETECTION? ↵
```

Press PAUSE .
Crop-mark detection stops. Depending on the content of the data, some time may pass before detection actually stops.

❷ Press ENTER .
This stops detection and starts cutting.

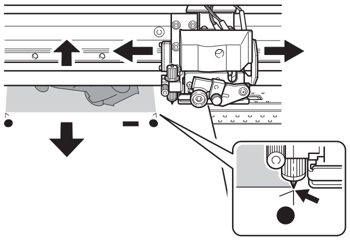
Note: After pressing PAUSE in step ❶, resuming detection or canceling output is also possible.
☞ P. 76, "Pausing or Canceling Output"

Aligning Manually and Cutting

Depending on the type of media, it may not be possible to detect crop marks automatically. When crop marks cannot be detected automatically, you perform alignment manually.

1. Set the base point.

❶ Use ◄ ► ▲ ▼ to align the center of the blade with the location shown in the figure.



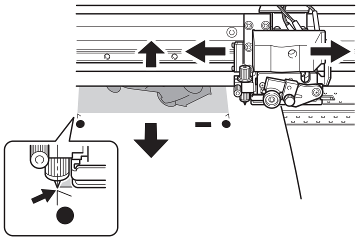
❷
```
W 700 mm
B
```

This indicates that the base point and align point 1 have been set.

Press BASE POINT .

2. Set the align points.

❶ Use ◄ ► ▲ ▼ to align the center of the blade with the location shown in the figure.



❷
```
SETTING
  ALIGN POINT 1    ↵
```

Hold down BASE POINT for one second or longer.
The number of the align point you set is automatically determined.

③ W 700 mm
B1

Press ENTER

④ Repeat steps ① through ③ to specify other align points as required.

⑤ Send the cutting data and perform cutting.

About Align Points

The numbers for align points are determined with reference to the location of the base point. You cannot set an align point unless you specify a base point. Redoing the setting for the base point clears any align points that have been set.

Correcting Misalignment for Printing and Cutting When Using Crop Marks

Procedure

1. Check the setting for the [AUTO ENV. MATCH] menu item.

Make sure the [AUTO ENV. MATCH] menu item is set to "ENABLE."

☞ P. 85, "Executing Environment Matching Automatically"

2. Execute the [ADJUST BI-DIR] menu item.

① Load the media.

☞ P. 31, "Loading Media," p. 82, "How to Load Sheet Media"

② Perform bidirectional adjustment.

☞ P. 89, "Correcting for Misalignment in Bidirectional Printing," p. 90, "Correcting for Misalignment in Bidirectional Printing More Precisely"

3. Print a test pattern and cut it.

① MENU ◀⬍
CUTTING MENU ▶

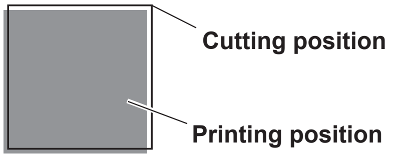
Press MENU.
Press ▲ several times.

② CUTTING MENU ◀⬍
PRINT - CUT ADJ. ▶

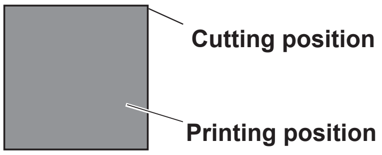
Press ▶.
Press ▼.

③ CROP - CUT ADJ. ◀⬍
SETTING ▶

Press ▶.
Press ENTER.



Cutting position and printing position are misaligned.



Cutting position and printing position are aligned.

When adjustment is needed, go on to the steps below.

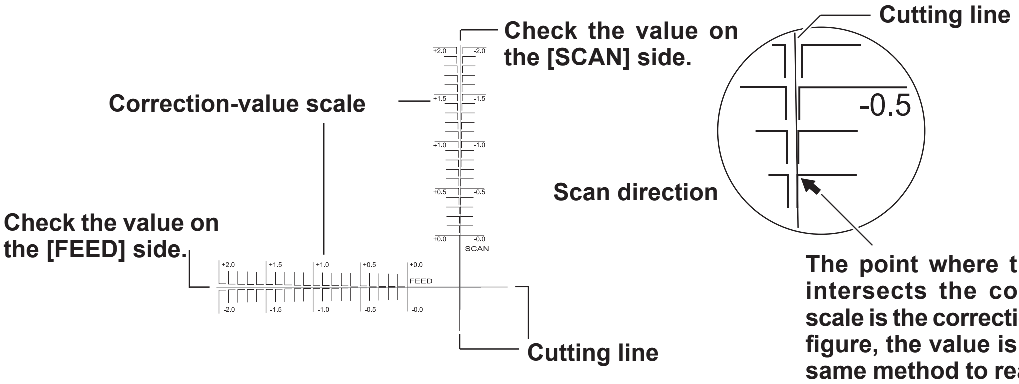
4. Print and cut a test pattern for adjustment.

```
PRINT - CUT ADJ.   ◄⬍
TEST PRINT 2        ↵
```

Press ▲.
Press ENTER to execute.

5. From the test pattern, read the correction value at the location.

Test pattern


Check the value on the [SCAN] side.
Cutting line
Correction-value scale
-0.5
Scan direction
Check the value on the [FEED] side.
SCAN
FEED
Cutting line

The point where the cutting line intersects the correction-value scale is the correction value. In this figure, the value is "-0.3." Use the same method to read the value on the [FEED] side.

6. Enter the correction value you read.

❶

```
CROP - CUT ADJ.    ◄⬍
SETTING             ►
```

Press ▲.

❷

```
F :- 0.30  ►  - 0.30mm
S :  0.00  ►  - 0.20mm  ↵
```

Press ►.
Use ▲ ▼ to set the correction value for [F] (the feed direction).
Use ◄ ► to set the correction value for [S] (the scanning direction).
Press ENTER to enable the setting.

❸

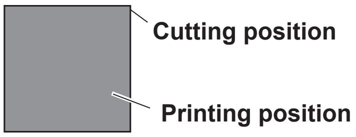
```
CROP - CUT ADJ.    ◄⬍
SETTING             ►
```

Press MENU.

7. Check the results of adjustment.

```
CROP - CUT ADJ.    ◄⬍
SETTING             ►
```

Press ▲.
Press ENTER to execute.
If the printing and cutting lines are aligned, adjustment is complete.
If further adjustment is needed, go back to step *6.* and fine-tune the adjustment.


Cutting position
Printing position

Cutting position and printing position are aligned.

Description

Depending on the composition of the media, the positioning of printing and cutting may be misaligned even when you're using crop marks. Make corrections for misaligned printing and cutting for the media you're using.

Default Setting

[F] (feed direction): 0.00 mm
[S] (scanning direction): 0.00 mm

5-8 Gloss Ink Features and Printing Methods

Features of Gloss Ink

The ECO-UV Gloss ink that this unit uses can impart a glossy feel to the printed item, as well as enhancing weatherability and robustness. Also, depending on the printing settings, you can even deliberately eliminate glossiness and produce a matte finish, or perform fill overprinting using gloss ink to raise the printed surface and create an embossed finish.

Glossiness, weatherability, and robustness may vary depending on the media used, the environment, and other printing conditions.

Methods of Printing Using Gloss Ink

Using gloss ink requires making settings in the included software raster image processor (RIP) and elsewhere. For detailed information on matters such as how to make the settings, refer to the White and Gloss Ink Guide.
You can also perform dual-pass printing, in which media printed in color is pulled back to its original location, then fill-overprinted with gloss ink. Please note that in such cases, the media must be pulled back, and so a take-up unit cannot be used.

☞ "White and Gloss Ink Guide," p. 48 "Operating Conditions for the Take-up System"

Use of the Middle Pinch Rollers in Dual-pass Printing

When the media is pulled back in the course of dual-pass printing or the like, the middle pinch rollers may scratch the media slightly. This scratching is especially noticeable on transparent media. In such cases, secure the media using only the left pinch roller and the right pinch roller.

☞ P. 31 "Loading Media"

Installation Environment

The characteristics of gloss ink make any dust that adheres to the ink plainly visible. Install and use this unit in a location that has little dust.

5-9 White Ink Features and Printing Methods

Features of White Ink

The ECO-UV white ink that this unit uses achieves high density and concealment, and is capable of providing attractive results when white and CMYK inks are overprinted. This ink is suited to printing on transparent media, and lets you create results intended to be viewed from the back (the side opposite the printed surface) by reversing the image and changing the sequence in which the white ink and CMYK inks are printed. You can use this to create items for shop interiors and displays, PET bottles and other packages, decals, and more.

Methods of Printing Using White Ink

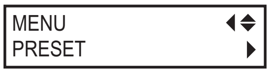
Using white ink requires making settings in the included software raster image processor (RIP) and elsewhere. For detailed information on matters such as how to make the settings, refer to the White and Gloss Ink Guide.

☞ "White and Gloss Ink Guide"

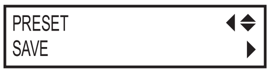
5-10 Saving the Printer Settings to Match the Media

Saving Optimized Media Settings As Preset Values

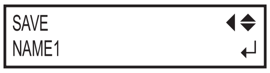
Procedure

❶ 
MENU
PRESET ▶

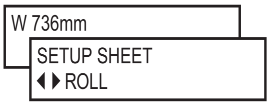
Press MENU.

❷ 
PRESET
SAVE ▶

Press ►.
Press ▼.

❸ 
SAVE
NAME1 ↵

Press ►.
Use ▲ ▼ to select any one from "NAME1" to "NAME8."
Press ENTER to save.
The present menu settings are saved in the preset you chose in step ❸.

❹ 
W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

Using the [PRESET] menu lets you easily change a wide variety of settings to optimize them for the media.
Making changes for each menu item every time you change the media can be troublesome. That's why it can be useful to save the menu-item settings optimized for an often-used type of media as a preset. The next time you use the media, you can change the menu-item settings to the optimal values for the media simply by loading the preset you saved. Menu items that can be saved in presets are listed below.

Menu Item	Referrence page
[EDGE DETECTION]	P. 78, "Using Transparent Media"
[VACUUM POWER]	P. 78, "Preventing Media from Coming Loose"
[FULL WIDTH S]	P. 79, "Speeding Up Printing for Narrow Media"
[ADJUST BI-DIR SIMPLE SETTING]	P. 89, "Correcting for Misalignment in Bidirectional Printing"
[ADJUST BI-DIR DETAIL SETTING]	P. 90, "Correcting for Misalignment in Bidirectional Printing More Precisely"
[CALIBRATION]	P. 92, "Performing Feed Correction to Alleviate Horizontal Bands and the Like"
[CALIBRATION] (in the [CUTTING MENU])	P. 93, "Performing Distance Correction During Cutting"
[FORCE], [SPEED], [OFFSET], [UP-SPEED]	P. 95, "Fine-tuning the Cutting Conditions"
[PRINT-CUT ADJ.]	P. 100, "Correcting Misalignment of the Printing and Cutting Positions"
[CROP-CUT ADJ.]	P. 105, "Correcting Misalignment for Printing and Cutting When Using Crop Marks"

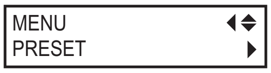
Up to eight types of presets can be saved. You can assign a name to each one. Using media names for these may aid recognition and clarity.

☞ P. 111, "Loading a Saved Preset," p.111, "Assigning a Name to a Preset"

Loading a Saved Preset

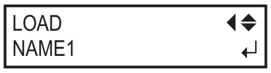
Procedure

❶



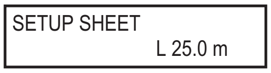
Press MENU.

❷



Press ► twice.
Use ▲ ▼ to select the name of a preset you want to load.

❸



Press ENTER to load.
The settings are changed and the screen shown in the figure appears.

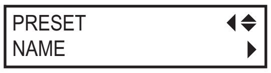
Description

This loads a saved preset. You can select any one of eight types of presets. (When no names have been assigned, you select from among NAME1 through NAME8.)
If you load a preset while SET UP is illuminated, SET UP goes dark. To start printing, press SET UP once more and redo the preparations for printing.

Assigning a Name to a Preset

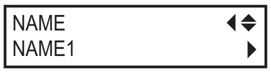
Procedure

❶



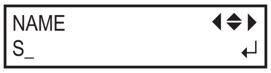
Press MENU.
Press ►.
Press ▼ twice.

❷



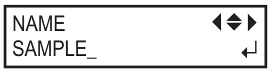
Press ►.
Use ▲ ▼ to select any one from NAME1 to NAME8.

❸



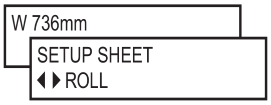
Press ►.
Use ▲ ▼ to enter a character.

❹



Press ►.
Use ▲ ▼ to enter the next character.
Enter the following characters in the same way.
When you're finished entering text, press ENTER.

❺



Press MENU.
Press ◄ to go back to the original screen.

Description

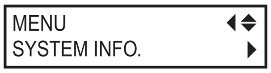
This assigns a name to a saved preset. Using media names may aid recognition and clarity.
The characters you can enter are "A" through "Z," "0" through "9," and the "-" character. You can enter up to 15 characters, including spaces.

5-11 Making the Network Settings

Setting the IP Address, Subnet Mask, Etc.

Procedure

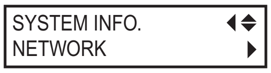
①



MENU
SYSTEM INFO.

Press MENU.
Press ▲ several times.

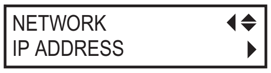
②



SYSTEM INFO.
NETWORK

Press ►.
Press ▲.

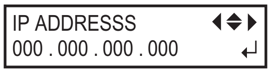
③



NETWORK
IP ADDRESS

Press ►.
Use ▲ ▼ to choose the item whose setting you want to make.

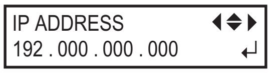
④



IP ADDRESSS
000 . 000 . 000 . 000

Press ► twice.
Use ▲ ▼ to select the address number.

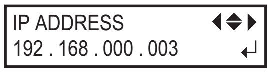
⑤



IP ADDRESS
192 . 000 . 000 . 000

Press ►.

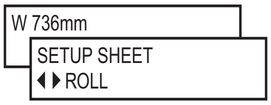
⑥



IP ADDRESS
192 . 168 . 000 . 003

Repeat ④ and ⑤ to set all the address numbers.
When you have finished making the setting, press ENTER.

⑦



W 736mm
SETUP SHEET
ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

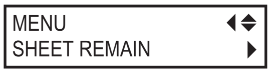
Make sure the machine is connected to the network by an Ethernet cable.
For detailed information about the settings, consult your network administrator.

[IP ADDRESS]: IP address
[SUBNET MASK]: Subnet mask
[GATEWAY ADDR.]: Gateway address
[MAC ADDRESS.]: MAC address

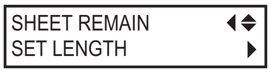
5-12 Viewing Information about the Media and the System

Displaying the Amount of Media Remaining

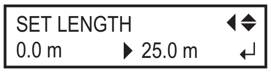
Procedure

❶

MENU ◀⬍
SHEET REMAIN ▶

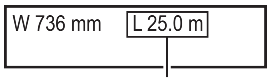
Press MENU.
Press ▲ several times.

❷

SHEET REMAIN ◀⬍
SET LENGTH ▶

Press ►.
Press ▼.

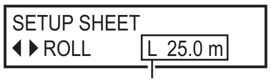
❸

SET LENGTH ◀⬍
0.0 m ▶ 25.0 m ↵

Press ►.
Use ▲ ▼ to set the amount of media remaining.
Press ENTER to enable the setting.

❹

W 736 mm L 25.0 m

This display is updated.

Press MENU to go back to the original screen.


SETUP SHEET
◀▶ ROLL L 25.0 m

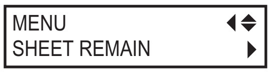
If setup has not been performed, the set value flashes.

Description

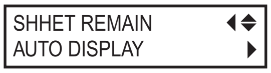
You can display how much of the media in use is left. Once you set the amount of media remaining, the amount remaining is displayed at the top menu until it reaches zero. If you cancel the setup such as by removing the media or raising the loading lever, the amount remaining at that time flashes on the screen.
The amount of media remaining is not updated automatically when you change the media. Redo the setting whenever you change the media. You can also make the setting display this menu automatically whenever you change the media.
Note, however, that when sheet media is loaded (that is, when [SETUP SHEET] is set to "PIECE"), the setting for the amount of remaining media is made automatically.
See the next section, "Verifying the Setting for the Amount Remaining Every Time the Media Is Changed."
Note: The remaining amount that is displayed is only an estimate, and its accuracy is not assured.

Verifying the Setting for the Amount Remaining Every Time the Media Is Changed

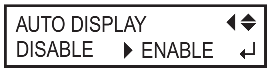
Procedure

❶

MENU ◀⬍
SHEET REMAIN ▶

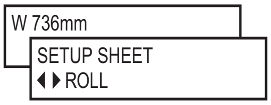
Press MENU.
Press ▲ several times.

❷

SHHET REMAIN ◀⬍
AUTO DISPLAY ▶

Press ►.
Press ▼ twice.

❸

AUTO DISPLAY ◀⬍
DISABLE ▶ ENABLE ↵

Press ►.
Use ▲ ▼ to select "ENABLE."
Press ENTER to enable the setting.

❹

W 736mm
SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

Setting this to "ENABLE" automatically displays [SHEET REMAIN] whenever you change the media and finish setup.
This makes it impossible to go on to the next operation unless you redo the setting for the amount remaining. This can be useful for keeping you from forgetting to redo the setting when you change the media.
When you set this to "ENABLE," however, be sure also to set the [EDGE DETECTION] menu item to "ENABLE." When [EDGE DETECTION] is set to "DISABLE," then [SHEET REMAIN] is not displayed automatically, regardless of the setting for [AUTO DISPLAY].

☞ P. 78, "Using Transparent Media"

Default Setting

[AUTO DISPLAY]: DISABLE

Printing the Amount of Remaining Media

Procedure

❶
```
MENU              ◄⬍
SHEET REMAIN       ►
```
Press MENU.
Press ▲ several times.

❷
```
SHHET REMAIN      ◄⬍
PRINT MEMO         ↵
```
Press ►.
Press ENTER to perform printing.

❸
```
W 736 mm    L 25.0 m
```
Press MENU.
Press ◄ to go back to the original screen.

Description

This prints the amount of media remaining that is displayed at the top menu. You use this when you want to make a record of the remaining length of the media now in use. Printing the amount of media remaining before you change the media enables you to refer to the printed record and use the value to make the setting for the remaining amount the next time you use the media.
Note, however, that continuing by performing the next print starts the print on top of the portion where the amount of remaining media is printed.
After printing the amount remaining, then before you perform the next output operation, we recommend cutting off the media.

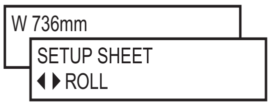
Printing a System Report

Procedure

❶
```
MENU              ◄⬍
SUB MENU           ►
```
Press MENU.
Press ▼ several times.

❷
```
SUB MENU          ◄⬍
SYSTEM REPORT      ↵
```
Press ►.
Press ▲ several times.
Press ENTER to start printing.

3


W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◀ to go back to the original screen.

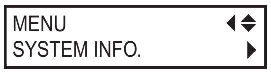
Description

This prints system information, including a list of setting values.

Viewing the Serial Number, Firmware Version, and Other Information

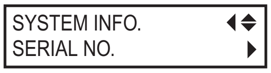
Procedure

1


MENU ◀⬍
SYSTEM INFO. ▶

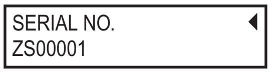
Press MENU.
Press ▲ several times.

2


SYSTEM INFO. ◀⬍
SERIAL NO. ▶

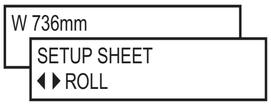
Press ▶.
Use ▲ ▼ to choose the information you want to view.

3


SERIAL NO. ◀
ZS00001

Press ▶.

4


W 736mm
SETUP SHEET
◀▶ROLL

Press MENU.
Press ◀ to go back to the original screen.

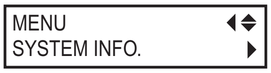
Description

You can view the following information.
[MODEL]: Model name
[SERIAL NO.]: Serial number
[INK]: Ink type
[FIRMWARE]: Firmware version

Viewing the Network Settings

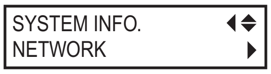
Procedure

1


MENU ◀⬍
SYSTEM INFO. ▶

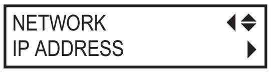
Press MENU.
Press ▼ several times.

2


SYSTEM INFO. ◀⬍
NETWORK ▶

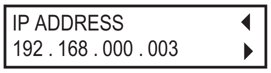
Press ▶.
Press ▲.

3


NETWORK ◀⬍
IP ADDRESS ▶

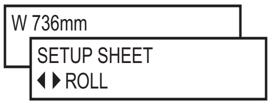
Press ▶.
Use ▲ ▼ to choose the information you want to view.

4


IP ADDRESS ◀
192 . 168 . 000 . 003 ▶

Press ▶.

⑤



W 736mm

SETUP SHEET
◀▶ ROLL

Press MENU.
Press ◄ to go back to the original screen.

Description

You can view the following information.
[IP ADDRESS]: IP address
[SUBNET MASK]: Subnet mask
[GATEWAY ADDR.]: Gateway address
[MAC ADDRESS]: MAC address

5-13 Performing Maintenance

Draining Ink and Performing Internal Washing

Procedure

❶
```
MENU         ◀⬍
SUB MENU      ▶
```
Press MENU.
Press ▼ several times.

❷
```
SUB MENU     ◀⬍
INK CONTROL   ▶
```
Press ►.
Press ▲ twice.

❸
```
INK CONTROL  ◀⬍
HEAD WASH     ↵
```
Press ►.
Press ▼ twice.
Press ENTER to execute.

Description

This drains the ink inside the printer and washes the interior using cleaning SOL INK cartridges as a preliminary for moving the printer or conducting maintenance. This operation requires four unused cleaning SOL INK cartridges. The screen displays information such as instructions to insert and remove SOL INK cartridges. Follow these instructions to carry out the procedure.
After finishing washing, the sub power is automatically switched off.
You do not need to carry this out as part of your daily maintenance activities.

Draining Ink Remaining Inside the Machine

Procedure

❶
```
MENU         ◀⬍
SUB MENU      ▶
```
Press MENU.
Press ▼ several times.

❷
```
SUB MENU     ◀⬍
INK CONTROL   ▶
```
Press ►.
Press ▲ twice.

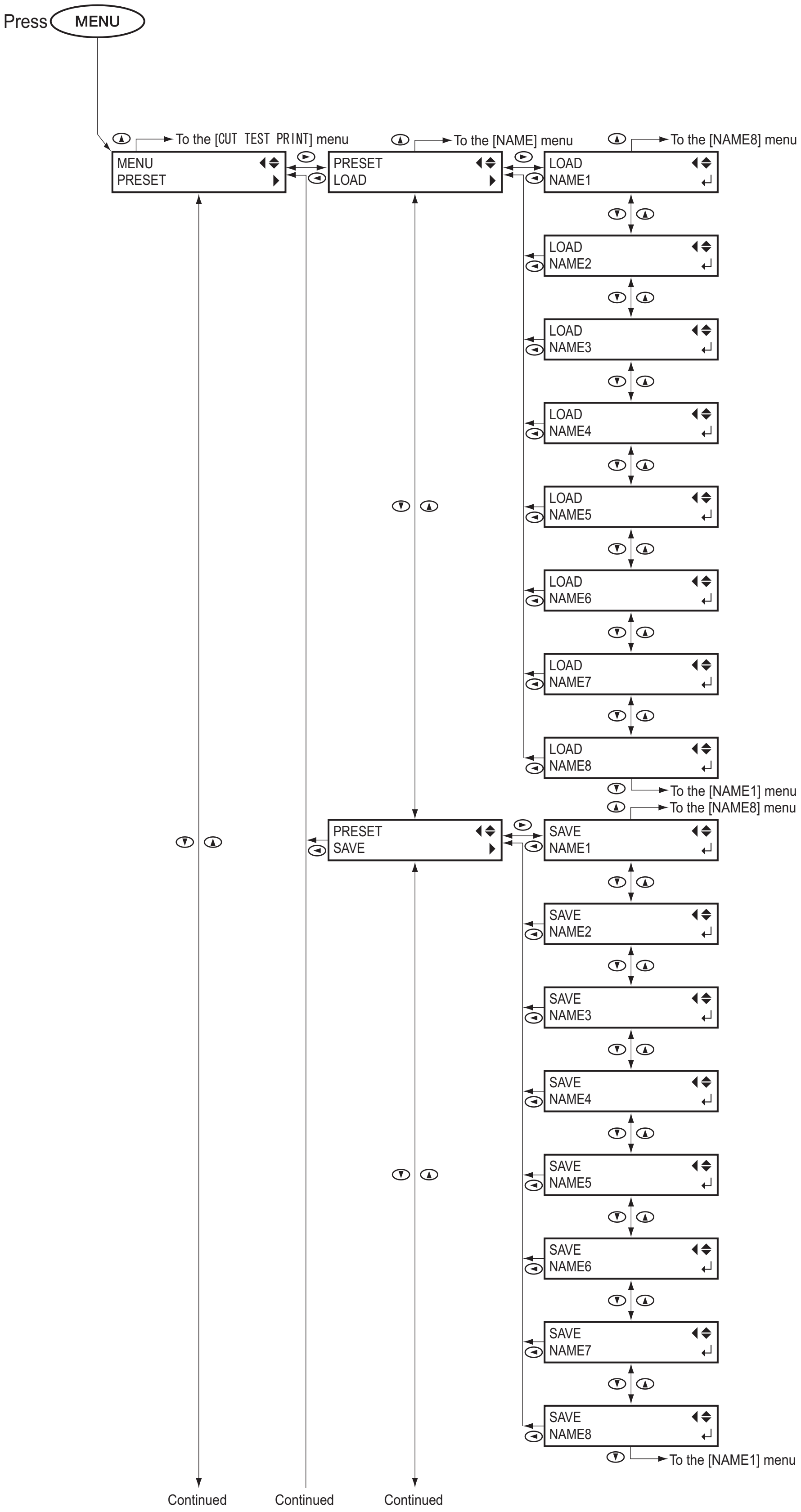
❸
```
INK CONTROL  ◀⬍
PUMP UP       ↵
```
Press ►.
Press ▼.
Press ENTER to execute.

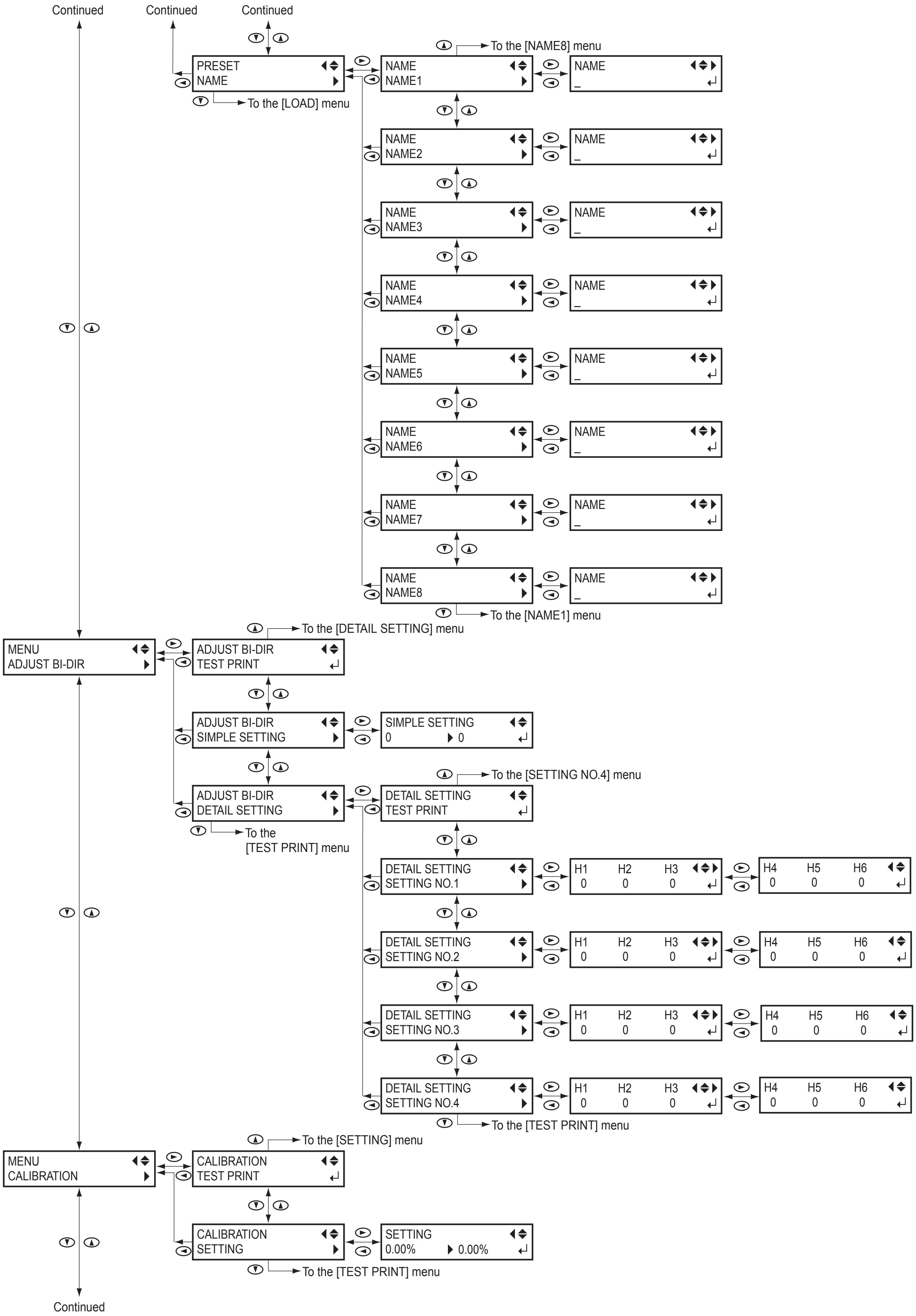
Description

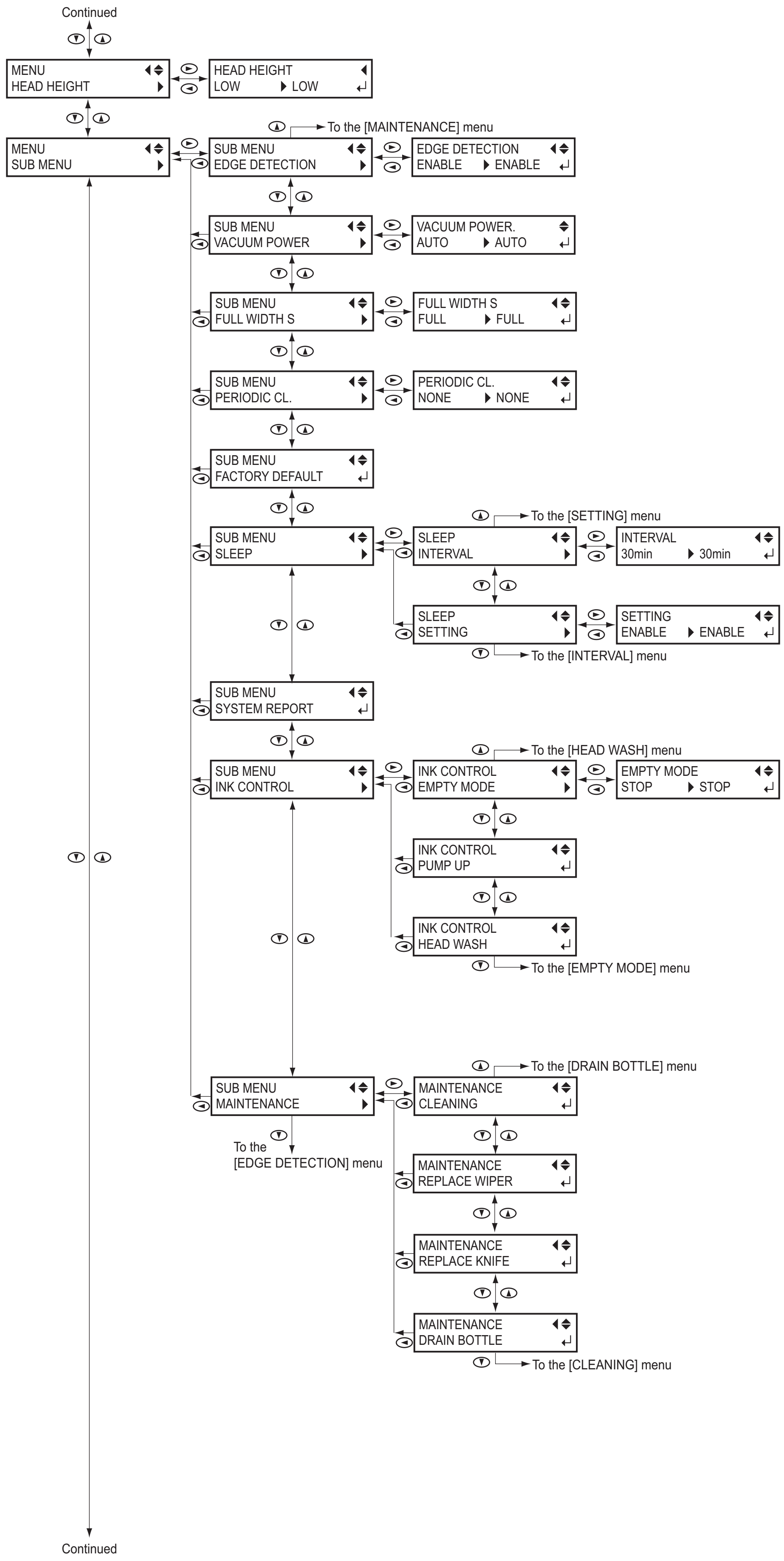
This removes ink inside the printer as a preliminary procedure for performing maintenance. The screen displays information such as instructions to insert and remove cartridges. Follow these instructions to carry out the procedure. After finishing the procedure, the sub power is automatically switched off.
You do not need to carry this out as part of your daily maintenance activities.

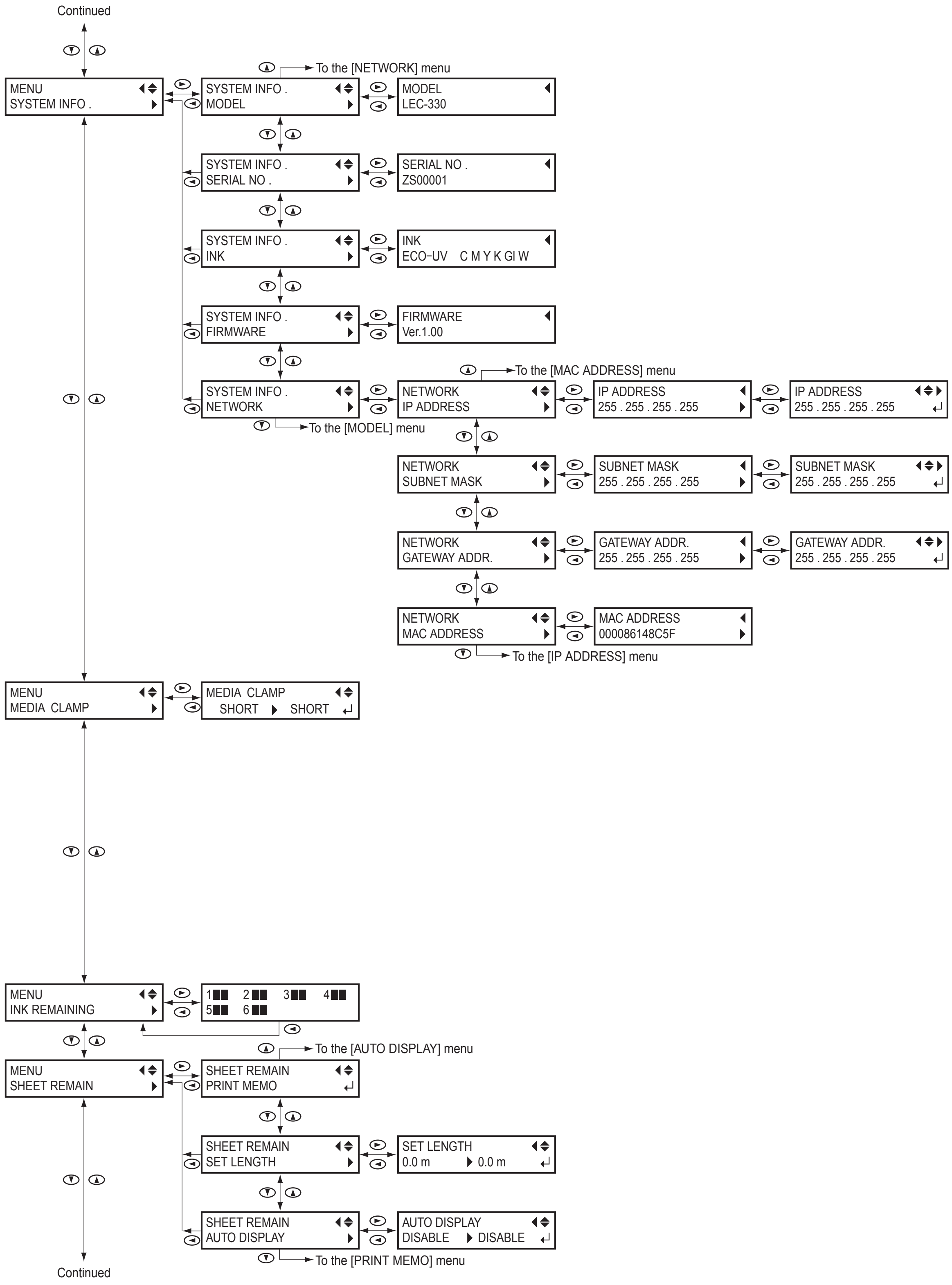
5-14 Menu List

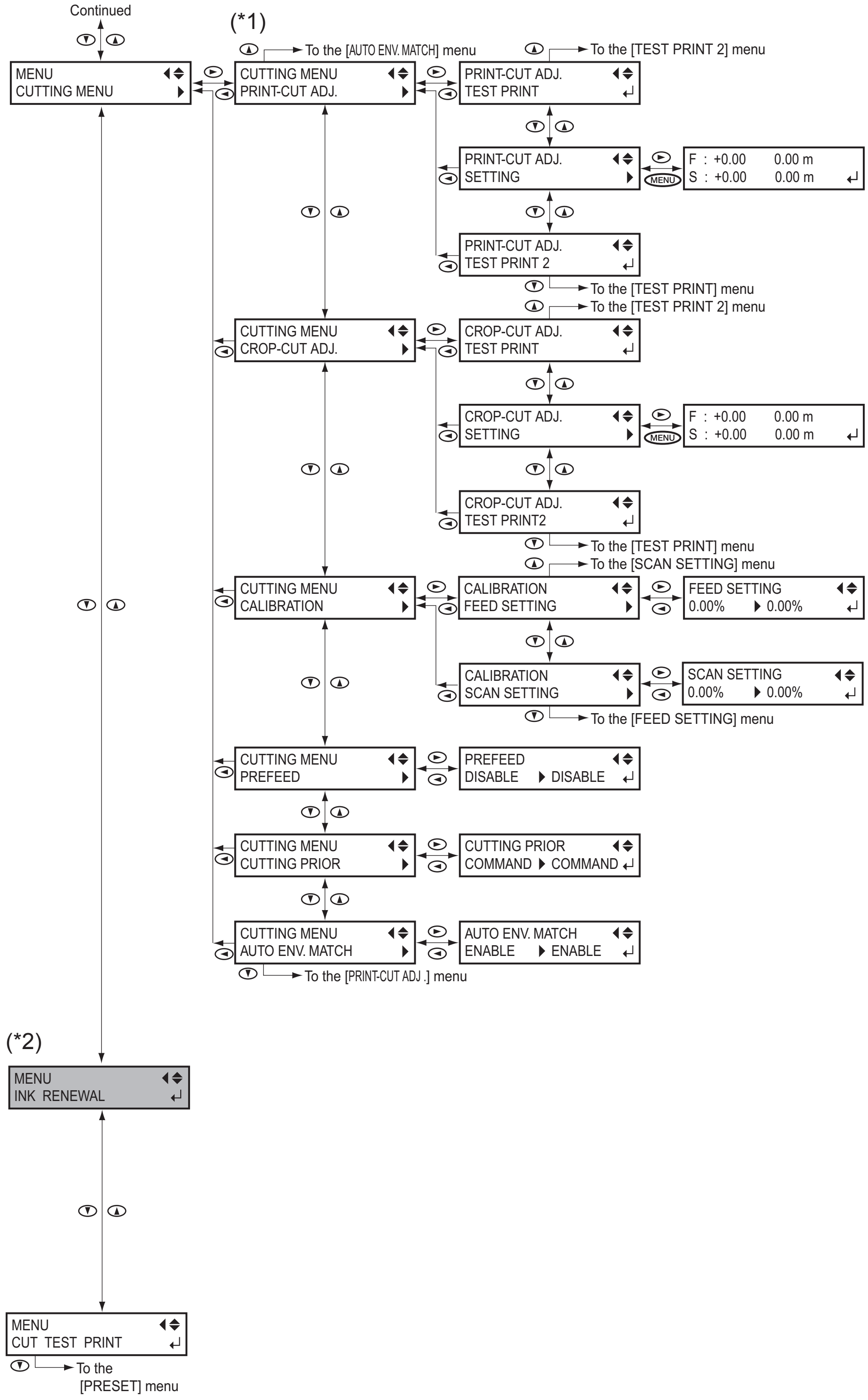
Main Menu


Press MENU
To the [CUT TEST PRINT] menu
To the [NAME] menu
To the [NAME8] menu
MENU PRESET
PRESET LOAD
LOAD NAME1
LOAD NAME2
LOAD NAME3
LOAD NAME4
LOAD NAME5
LOAD NAME6
LOAD NAME7
LOAD NAME8
To the [NAME1] menu
To the [NAME8] menu
PRESET SAVE
SAVE NAME1
SAVE NAME2
SAVE NAME3
SAVE NAME4
SAVE NAME5
SAVE NAME6
SAVE NAME7
SAVE NAME8
To the [NAME1] menu
Continued
Continued
Continued


Continued
Continued
Continued
PRESET
NAME
To the [LOAD] menu
To the [NAME8] menu
NAME
NAME1
NAME
_
NAME
NAME2
NAME
_
NAME
NAME3
NAME
_
NAME
NAME4
NAME
_
NAME
NAME5
NAME
_
NAME
NAME6
NAME
_
NAME
NAME7
NAME
_
NAME
NAME8
NAME
_
To the [NAME1] menu
To the [DETAIL SETTING] menu
MENU
ADJUST BI-DIR
ADJUST BI-DIR
TEST PRINT
ADJUST BI-DIR
SIMPLE SETTING
SIMPLE SETTING
0 0
To the [SETTING NO.4] menu
ADJUST BI-DIR
DETAIL SETTING
To the
[TEST PRINT] menu
DETAIL SETTING
TEST PRINT
DETAIL SETTING
SETTING NO.1
H1 H2 H3
0 0 0
H4 H5 H6
0 0 0
DETAIL SETTING
SETTING NO.2
H1 H2 H3
0 0 0
H4 H5 H6
0 0 0
DETAIL SETTING
SETTING NO.3
H1 H2 H3
0 0 0
H4 H5 H6
0 0 0
DETAIL SETTING
SETTING NO.4
H1 H2 H3
0 0 0
H4 H5 H6
0 0 0
To the [TEST PRINT] menu
To the [SETTING] menu
MENU
CALIBRATION
CALIBRATION
TEST PRINT
CALIBRATION
SETTING
SETTING
0.00% 0.00%
To the [TEST PRINT] menu
Continued


Continued
MENU
HEAD HEIGHT
HEAD HEIGHT
LOW LOW
MENU
SUB MENU
To the [MAINTENANCE] menu
SUB MENU
EDGE DETECTION
EDGE DETECTION
ENABLE ENABLE
SUB MENU
VACUUM POWER
VACUUM POWER.
AUTO AUTO
SUB MENU
FULL WIDTH S
FULL WIDTH S
FULL FULL
SUB MENU
PERIODIC CL.
PERIODIC CL.
NONE NONE
SUB MENU
FACTORY DEFAULT
To the [SETTING] menu
SUB MENU
SLEEP
SLEEP
INTERVAL
INTERVAL
30min 30min
SLEEP
SETTING
SETTING
ENABLE ENABLE
To the [INTERVAL] menu
SUB MENU
SYSTEM REPORT
To the [HEAD WASH] menu
SUB MENU
INK CONTROL
INK CONTROL
EMPTY MODE
EMPTY MODE
STOP STOP
INK CONTROL
PUMP UP
INK CONTROL
HEAD WASH
To the [EMPTY MODE] menu
To the [DRAIN BOTTLE] menu
SUB MENU
MAINTENANCE
MAINTENANCE
CLEANING
To the [EDGE DETECTION] menu
MAINTENANCE
REPLACE WIPER
MAINTENANCE
REPLACE KNIFE
MAINTENANCE
DRAIN BOTTLE
To the [CLEANING] menu
Continued


Continued
MENU
SYSTEM INFO .
To the [NETWORK] menu
SYSTEM INFO .
MODEL
MODEL
LEC-330
SYSTEM INFO .
SERIAL NO .
SERIAL NO .
ZS00001
SYSTEM INFO .
INK
INK
ECO-UV C M Y K Gl W
SYSTEM INFO .
FIRMWARE
FIRMWARE
Ver.1.00
To the [MAC ADDRESS] menu
SYSTEM INFO .
NETWORK
NETWORK
IP ADDRESS
IP ADDRESS
255 . 255 . 255 . 255
IP ADDRESS
255 . 255 . 255 . 255
To the [MODEL] menu
NETWORK
SUBNET MASK
SUBNET MASK
255 . 255 . 255 . 255
SUBNET MASK
255 . 255 . 255 . 255
NETWORK
GATEWAY ADDR.
GATEWAY ADDR.
255 . 255 . 255 . 255
GATEWAY ADDR.
255 . 255 . 255 . 255
NETWORK
MAC ADDRESS
MAC ADDRESS
000086148C5F
To the [IP ADDRESS] menu
MENU
MEDIA CLAMP
MEDIA CLAMP
SHORT SHORT
MENU
INK REMAINING
1 2 3 4
5 6
To the [AUTO DISPLAY] menu
MENU
SHEET REMAIN
SHEET REMAIN
PRINT MEMO
SHEET REMAIN
SET LENGTH
SET LENGTH
0.0 m 0.0 m
SHEET REMAIN
AUTO DISPLAY
AUTO DISPLAY
DISABLE DISABLE
To the [PRINT MEMO] menu
Continued

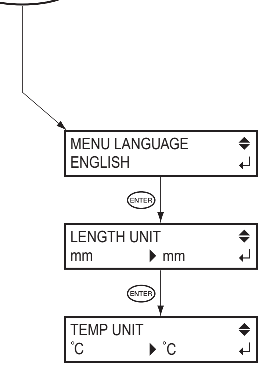

Continued
(*1)
To the [AUTO ENV. MATCH] menu
To the [TEST PRINT 2] menu
MENU
CUTTING MENU
CUTTING MENU
PRINT-CUT ADJ.
PRINT-CUT ADJ.
TEST PRINT
PRINT-CUT ADJ.
SETTING
MENU
F : +0.00 0.00 m
S : +0.00 0.00 m
PRINT-CUT ADJ.
TEST PRINT 2
To the [TEST PRINT] menu
To the [TEST PRINT 2] menu
CUTTING MENU
CROP-CUT ADJ.
CROP-CUT ADJ.
TEST PRINT
CROP-CUT ADJ.
SETTING
MENU
F : +0.00 0.00 m
S : +0.00 0.00 m
CROP-CUT ADJ.
TEST PRINT2
To the [TEST PRINT] menu
To the [SCAN SETTING] menu
CUTTING MENU
CALIBRATION
CALIBRATION
FEED SETTING
FEED SETTING
0.00% 0.00%
CALIBRATION
SCAN SETTING
SCAN SETTING
0.00% 0.00%
To the [FEED SETTING] menu
CUTTING MENU
PREFEED
PREFEED
DISABLE DISABLE
CUTTING MENU
CUTTING PRIOR
CUTTING PRIOR
COMMAND COMMAND
CUTTING MENU
AUTO ENV. MATCH
AUTO ENV. MATCH
ENABLE ENABLE
To the [PRINT-CUT ADJ.] menu
(*2)
MENU
INK RENEWAL
MENU
CUT TEST PRINT
To the
[PRESET] menu

(*1)
Holding down MENU ,and pressing CUT CONFIG displays this menu.

(*2)
This is not displayed when "CMYKGlGl" (cyan, magenta, yellow, black, gloss, gloss) is selected as the ink mode.

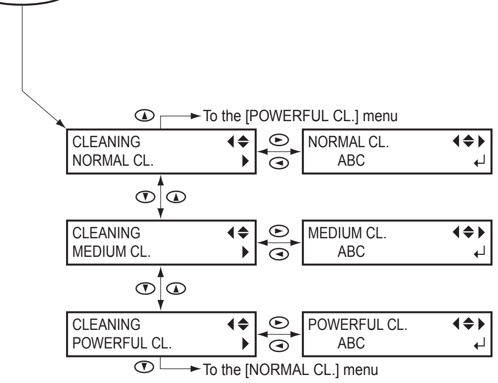
Language and Unit Menu

Hold down MENU and switch on the sub power.


MENU LANGUAGE
ENGLISH
ENTER
LENGTH UNIT
mm ▶ mm
ENTER
TEMP UNIT
°C ▶ °C

Cleaning Menu

Press CLEANING .


To the [POWERFUL CL.] menu
CLEANING
NORMAL CL.
NORMAL CL.
ABC
CLEANING
MEDIUM CL.
MEDIUM CL.
ABC
CLEANING
POWERFUL CL.
POWERFUL CL.
ABC
To the [NORMAL CL.] menu

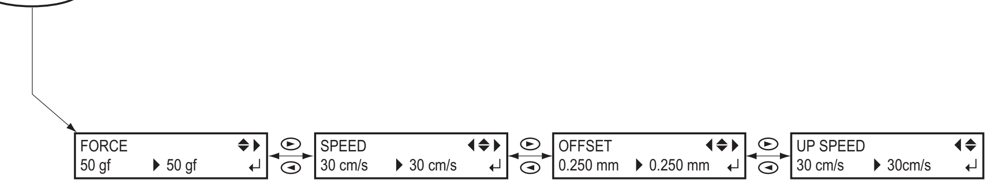
Hold down CLEANING for one second or longer.

Head cleaning for all groups

☞ P. 41, "When you want to clean all heads simultaneously"

Cutting Configuration Menu

Press CUT CONFIG .


FORCE
50 gf ▶ 50 gf
SPEED
30 cm/s ▶ 30 cm/s
OFFSET
0.250 mm ▶ 0.250 mm
UP SPEED
30 cm/s ▶ 30cm/s

Chapter 6

What to Do If

6-1 The Machine Doesn't Run

The Printer Unit Doesn't Run

Is the power switched on?

Switch on the printer's main power, then press the sub power switch and make sure the sub power switch lights up.

Is SET UP illuminated?

Printing is not performed when SET UP is not illuminated. Pull back the loading lever, close the front cover, and press SET UP .

Is the front cover open?

Close the front cover.

Is the top menu displayed?

If the top menu isn't displayed, printing doesn't start even when data is sent from the computer. To go to the top menu, press MENU , then press ◄ .

☞ P. 39, "Getting Ready to Receive Data from a Computer"

Is PAUSE illuminated?

When PAUSE lights up, operation is paused. To resume, press PAUSE . PAUSE goes dark and printing resumes.

Has ink run out?

```
1 _ 2 █ 3 █ 4 █ 5 █ 6 █
7 █ 8 █ 9 █10 █11 █12 █
```

When printing data is sent while the screen shown in the figure is displayed, a message appears and a warning beep sounds. At the same time, operation pauses. When the ink cartridge is replaced with a new one, printing starts.

☞ P. 42 "If Ink Runs Out"

☞ P. 85, "Determining What Happens When an Ink Runs Out"

Is a message displayed on the screen?

☞ P. 133, "If a Message Appears"

☞ P. 134, "If an Error Message Appears"

Is the power cord connected?

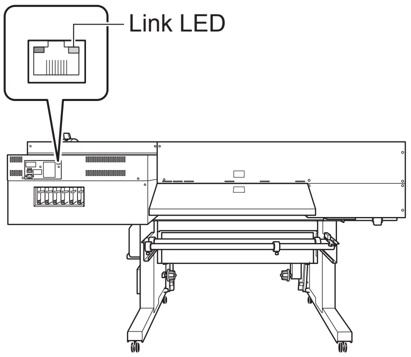
Connect the power cord securely.

Is the Link LED lighted?

If the Link LED for the Ethernet connector is not lighted, it means that a correct connection to the network has not been made. Make sure the network routing is suitable. Try connecting the computer and the machine to the same hub, or connecting them directly using a crossover cable. If this makes it possible to perform printing, it means the problem is in the network itself.

Are the network settings correct?

If printing is not possible even though the Link LED is lighted, check to make sure the IP address and other such settings are correct. The settings on both the machine and the computer must be appropriate. Redo the settings, checking to ensure that the IP address doesn't conflict with the IP address for another device on the network, that the port setting for the software RIP specifies the IP address set on the machine, that the settings have no typing errors, and for other such problems.



☞ Setup Guide

☞ P. 112 "Setting the IP Address, Subnet Mask, Etc."

Did the software RIP end abnormally?

Make sure the software RIP is running correctly, then switch the sub power switch off and back on.

Is the temperature of the room too low?

Use the machine in an environment where the temperature is 20 to 32˚C (68 to 90˚F).

The Media Take-up System Doesn't Run

Is the take-up unit cable connected?

Connect the take-up unit cable to the machine. To perform take-up automatically during printing, also make the setting for the AUTO switch.

☞ Setup Guide

☞ P. 31, "Loading Media"

6-2 Attractive Printing Is Impossible

Printed Results Are Coarse or Contain Horizontal Stripes

Do the print heads show dot drop-out?

Carry out a printing test and make sure no dot drop-out occurs. If dot drop-out is present, perform head cleaning.

☞ P. 40, "Printing Tests and Cleaning"

☞ P. 57, "When Head Cleaning Is Not Effective"

Is the head height appropriate?

Printing when the [HEAD HEIGHT] menu item is set to "HIGH" is coarser than when set to "LOW." Keep this set to "LOW" except when changing it is necessary, such as when you're using thick media.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

Have you carried out feed correction?

Large misalignment in the amount of feed of the media may result in printing that seems coarse or contains horizontal stripes. Either make the setting on the computer to match the type of media you're using, or make the setting for correction on the printer.

☞ P. 92, "Performing Feed Correction to Alleviate Horizontal Bands and the Like"

Did the media become slack during feed correction?

Slackness of the media during feed correction makes accurate correction impossible. Carry out feed correction with the media pulled taut.

☞ P. 92, "Performing Feed Correction to Alleviate Horizontal Bands and the Like"

After feed correction, was the media pulled back?

Never pull the media back after carrying out feed correction. Doing so may cause the correction results not to be applied properly and result in horizontal stripes.

☞ P. 92, "Performing Feed Correction to Alleviate Horizontal Bands and the Like"

Have you carried out bidirectional correction?

When you are performing bidirectional printing, use the [ADJUST BI-DIR] menu item to carry out correction. The optimal adjustment value may vary, depending mainly on the thickness of the media. Set or select an adjustment value that is suited to the media.

☞ P. 89, "Correcting for Misalignment in Bidirectional Printing"

☞ P. 90, "Correcting for Misalignment in Bidirectional Printing More Precisely"

Is the print mode suitable?

Try a higher-quality print mode. Depending on the media, uneven colors may occur in high-quality print modes, and the results are also greatly affected by the settings of the software RIP (such as the selected color profile). Make settings suited to the media you're using.

Is the printer installed in a level and stable location?

Never install the machine in a location where it is tilted or where it may wobble or experience vibration. Also make sure that the print heads are not exposed to moving air. These factors may lead to missing dots or reduced printing quality.

Is the printer installed in a location out of direct sunlight?

Never install in a location exposed to direct sunlight. Doing so may result in dot drop-out or other problems with reduced printing quality, or may even result in malfunction.

Is the media loaded and set up correctly?

If the media is not loaded and set up correctly, media feed may not be smooth, or printing may be adversely affected.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Are the settings for the [PRESET] menu item appropriate?

If the settings selected with the [PRESET] menu item are not suitable for the type of media, printing may be adversely affected. Choose settings optimized to the media you're using.

☞ P. 110, "Saving Optimized Media Settings As Preset Values"

☞ P. 111, "Loading a Saved Preset"

Colors Are Unstable or Uneven

Did you shake the ink cartridges gently before installing them?

Before you install a new ink cartridge, gently shake the cartridge.

Is the media wrinkled?

If the media is wrinkled and comes loose from the platen, colors may be uneven or printing quality may suffer.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Is the media sagging?

Performing printing using sagging roll media makes uneven colors more likely.

Was printing paused partway through?

When printing is paused, the coloring at the seam may be altered when printing resumes. Avoid pausing printing. With the factory-default settings, printing pauses when an ink cartridge runs empty. Before you perform lengthy printing, check the amount of ink remaining in the ink cartridges.

Printing may also pause when data is not sent from the computer quickly enough.

Are the operating parameters set to appropriate values?

Depending on the settings for such menu items as [FULL WIDTH

S] and [PERIODIC CL.], uneven colors may occur. If the settings have been changed, try restoring them to their default values.

☞ P. 79, "Speeding Up Printing for Narrow Media"

☞ P. 80, "Preventing Soiling of the Media and Dot Drop-out During Printing"

Is the printer installed in a level and stable location?

Never install the machine in a location where it is tilted or where it may wobble or experience vibration. Also, ensure that the print heads are not exposed to wind or blown air. These factors may lead to missing dots or reduced printing quality.

Is the printer being used in a location subject to severe changes in the operating environment?

Large fluctuations in temperature or humidity while printing is in progress may cause the colors to change partway through. When you're performing printing, use the machine in a location where temperature and humidity are stable.

Are the settings for the [PRESET] menu item appropriate?

If the settings selected with the [PRESET] menu item are not suitable for the type of media, printing may be adversely affected. Choose settings optimized to the media you're using.

☞ P. 110, "Saving Optimized Media Settings As Preset Values"

☞ P. 111, "Loading a Saved Preset"

The Media Becomes Soiled When Printed

Do the print heads contact the media?

The height of the print heads may be too low. Also, if the media is not loaded and set up correctly, it may wrinkle or come loose and strike the heads.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Are the print heads dirty?

The following may cause ink to drip on the media during printing.

- Buildup of fibrous dust (lint) around the heads.
- Ink transferred to the heads due to rubbing against the media.

If this happens, clean the heads using the cleaning kit. We recommend carrying out periodic head cleaning.

☞ P. 59, "Cleaning Using the Cleaning Kit"

Are the pinch rollers or media clamps dirty?

Perform cleaning periodically.

☞ P. 56, "Cleaning"

Cutting Is Misaligned or Skewed

Is the media loaded and set up correctly?

If the media is not loaded and set up correctly, or media feed is not smooth, cutting may be adversely affected. Make sure the media is loaded and set up correctly.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Are the settings for the cutting conditions appropriate?

Misalignment or skewing may occur if the cutting speed is too fast or the blade force is too high. Try changing the cutting conditions. With media having a strong adhesive layer, the adhesive layer reattaches to itself immediately after cutting. However, if a cutting test shows that the peeling of the media and the blade traces on the backing paper are optimal, then the media is being cut properly. Be careful not to make the blade force too high.

Is the length of printing too long?

For printing followed immediately by cutting in particular, the longer the page length (that is, the longer the distance the media is returned after printing), the greater is the chance of misalignment occurring. It is a good idea to keep the size of each single page to the minimum necessary.

Are you using media that exhibits large expansion and contraction?

When you're performing printing followed immediately by cutting, misalignment occurs if the media expands or contracts. If this happens, try performing printing with crop marks, then setting the base point and one or more align points and performing cutting. This corrects for expansion and contraction of the media.

Is [AUTO ENV. MATCH] set to the "DISABLE" setting?

The printing and cutting positions may become misaligned due to ambient temperature or humidity. Setting [AUTO ENV. MATCH] to "ENABLE" performs matching to the environment to correct for misalignment.

☞ P. 85, "Executing Environment Matching Automatically"

Are the settings for the [CALIBRATION] menu item (in the [CUTTING MENU] menu item) correct?

When you're performing printing followed immediately by cutting, go to [CUTTING MENU] and set the [CALIBRATION] value to "0.00."

☞ P. 93, "Performing Distance Correction During Cutting"

6-3 The Media Jams

The Media Jams

If an error message is displayed because the media has jammed, immediately correct the problem. Failure to do so may damage the print heads.

☞ P. 135, [MOTOR ERROR TURN POWER OFF]

Is the media warped or wrinkled?

Many factors can cause warping or wrinkling. Refer to the following and correct the problem.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Is the height of the print heads too low?

Try raising the heads higher. Media may inevitably warp or wrinkle slightly, so adjust the height of the heads to take this into account.

☞ P. 88, "Adjusting Head Height to Match Media Thickness "

6-4 The Media Cannot Be Taken Up Smoothly

The Media Cannot Be Taken Up Smoothly

Is media feed unstable?

Various factors can make media feed unstable. Refer to the following and correct the problem.

☞ P. 131, "Media Wrinkles or Shrinks, or Feed Is Unstable"

Is the paper tube installed correctly?

Securely insert the paper tube onto the end caps. If the paper tube is not attached correctly, it may spin without traction and fail to take up the media.

☞ Setup Guide

Is the paper tube bent or sagging?

Media cannot be taken up smoothly when the paper tube is bent or sagging.

Are you using the included paper tube?

For the paper tube, use the included item. Using something other than the included item may result in spinning without traction or other problems that impede media take-up.

☞ P. 48, "About the Paper Tube"

6-5 Media Wrinkles or Shrinks, or Feed Is Unstable

A variety of problems can occur if the media feed is not smooth. This can cause such problems as poor printing quality, contact with the media by the print heads, misaligned positioning, or media jams. Take action as follows.

Media Wrinkles or Shrinks

Is the media loaded and set up straight and securely?
Feed is not smooth when the media is not straight or is tensioned unevenly on the left and right. Reload the media.

Are the media clamps mounted?
When you're performing printing, be sure to attach the media clamps.

Media Feed Is Not Straight

Is the media loaded and set up straight and securely?
Feed is not smooth when the media is not straight or is tensioned unevenly on the left and right. Reload the media.

Media Feed Is Not Smooth

Do the media or the shafts strike some other object?
Make sure the media and the shafts do not touch anything else. This may affect output, even when feed appears to be smooth.

Is the media too thick?
Media that is too thick may not only cause unstable feed, but may scrape the print heads, resulting in malfunction. Never use such media.

Are the grit rollers dirty?
Check to make sure the grit rollers are free of buildup of foreign material such as media scraps.

6-6 The Print Heads Stopped Moving

If the print-head carriage stops over the platen, take action immediately to prevent the heads from drying out.

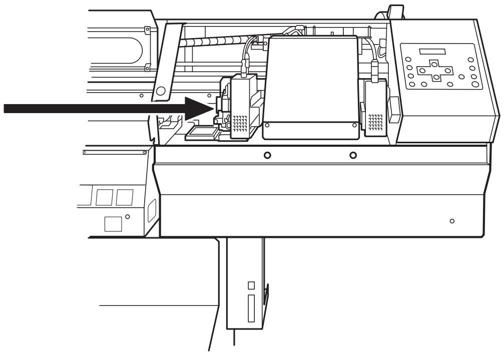
What to Do First

Switch the sub power off, then back on again. (If the media is jammed, then also remove the media.) If the print-head carriage move to the standby position (the right side of the main unit), it means the operation has ended successfully.
If the print-head carriage did not move, try switching off the main power, then again switching on the main power, followed by the sub power.

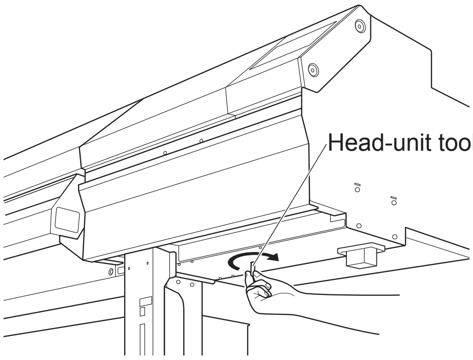
If the Heads Still Do Not Move

If the heads still do not move, carry out the following emergency response measure, then contact your authorized Roland DG Corp. dealer or Roland DG Corp. service center.

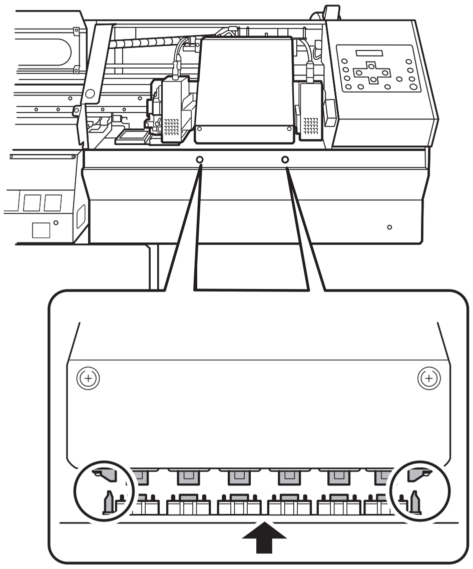
1. Switch off the main power.
2. Open the front cover.
3. Detach the side cover.
4. Gently move the print heads by hand as far as the standby position.



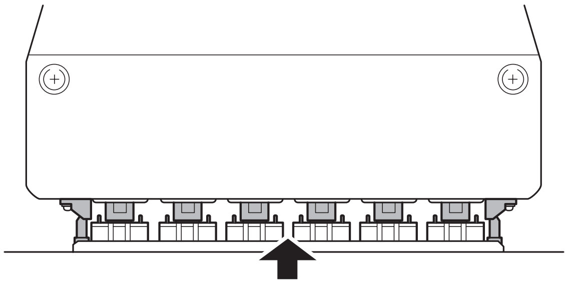
5. Insert the head-unit tool into the hole at the bottom of the machine and turn gently. The cap unit rises.



6. Make the guides at the edges of the print heads line up with the guides at the edges of the cap unit. Turn the tool further to bring the cap unit near the heads.



7. When the heads make contact with the cap unit, turn the tool one or two turns more.



Make sure the print heads are capped tightly.

6-7 If a Message Appears

These are the main messages that appear on the machine's display to prompt correct operation. They do not indicate any error. Follow the prompts and take action accordingly.

[1■ 2■ 3■ 4■ ...]

Only a small amount of ink remains. Replace the cartridge indicated by the flashing number with a new cartridge.

[PRESS POWER KEY TO CLEAN]

This appears when the machine has been unused for about one month.

This feature is to remind you to switch on the sub power once a month.

☞ P. 72, "When Not in Use for a Prolonged Period"

[SET CARTRIDGE.]

Insert the ink cartridge indicated by the flashing number. This message appears at times such as during ink cartridge replacement.

[REMOVE CARTRIDGE.]

Remove the ink cartridge indicated by the flashing number. This message appears at times such as during ink cartridge replacement.

[SET CL-LIQUID]

Insert the SOL INK cleaning cartridge indicated by the flashing number. This message appears at times such as during head cleaning.

[REMOVE CL-LIQUID]

Remove the SOL INK cleaning cartridge indicated by the flashing number. This message appears at times such as during head cleaning.

[END OF THE SHEET]

The trailing edge of the media was detected during operation. Press any button on the operation panel to clear the message. Load new media.

[SHEET NOT LOADED PRESS SETUP KEY]

Load media and press SET UP. This message appears when an attempt to perform a printing test was made while no media was loaded.

[INSTALL DRAIN BOTTLE]

Check whether the drain bottle is installed. Install the drain bottle, then press ENTER.

[CHECK DRAIN BOTTLE]

This appears when a certain amount of discharged fluid collects in the drain bottle. To clear the message, press ENTER. If this screen appears, go to the [DRAIN BOTTLE] menu and discard the discharged fluid in the bottle.

☞ P. 54, "Disposing of Discharged Ink"

[CLOSE THE COVER (FRONT COVER, SIDE COVER or MAINTENANCE COVER]

Close the front cover, side cover, maintenance cover. For safety, the carriage does not operate while a cover is open.

[SET HEAD HEIGHT TO xxx]

The height of the print heads is lower than the height specified on the computer.

The heads move to a location where you can operate the height-adjustment lever. Adjust to the displayed height, then press ENTER.

[TIME FOR MAINTENANCE]

It is time to clean the heads using the cleaning kit. After verifying, press ENTER.

☞ P. 59, "Cleaning Using the Cleaning Kit"

[TIME FOR WIPER REPLACE]

It is time to replace the wipers. After verifying, press

☞ P. 64, "Replacing the Wipers"

[CIRCULATING INK]

The white ink is being circulated inside the machine. This is automatically carried out on a periodic basis to prevent settling of the white ink. Wait until the displayed message changes.

6-8 If an Error Message Appears

This describes the error messages that may appear on the machine's display, and how to take action to remedy the problem. If the action described here does not correct the problem, or if an error message not described here appears, contact your authorized Roland DG Corp. dealer.

[ALIGN POINT POSITION INVALID]

An attempt was made to set an align point at a location where the setting cannot be made.

No align point can be set when the angle of the base point and the align point is too large.

Reload the media correctly, so that the angle is minimized, then set the base point and the align point again to match the crop marks.

☞ P. 103, "Aligning Automatically and Cutting"

[CARRIAGES ARE SEPARATED]

The cutting carriage and the printing carriage were improperly disconnected.

A problem such as a media jam occurred, impeding correct operation. Operation cannot be continued. Switch the sub power off, then back on.

[CAN'T PRINT CROP CONTINUE?]

The size of the data including the crop marks is larger than the printing or cutting area of the loaded media.

To continue performing output without correcting this, press ENTER. At this time, the portion extending beyond the printing or cutting area and the crop marks are not printed. To stop printing, stop sending data from the computer, then raise the loading lever. Make the printing or cutting area wider, such as by replacing the media with a larger piece of media or by changing the positions of the pinch rollers, then send the data again.

The size of the data being output is too small.

Make the scanning-direction size of the data at least 65 mm (2-9/16 in).

To continue performing output without correcting this, press ENTER. At this time, the data is output without printing the crop marks. To stop output, stop sending data from the computer, then hold down SET UP for one second or longer. Change the size of the data, then send the data again. There is no limitation in the size of the data in the media-feed direction.

[CROPMARK ERROR NOT FOUND]

Automatic detection of crop marks could not be accomplished.

Load the media at the correct position and perform detection of crop marks again. Depending on the media, it may not be possible to detect crop marks automatically. If repeating automatic crop-mark detection results in an error again, then perform manual crop-mark detection.

☞ P. 104, "Aligning Manually and Cutting"

TEMPERATURE IS TOO HIGH **°C]

The temperature of the location where the machine is installed has risen above the ambient temperature at which the machine can operate.

Operation cannot be continued. Switch off the sub power. The displayed temperature is the current ambient temperature of the installation location. Bring the installed location to a temperature at which operation is possible (20 to 32°C) and allow the machine to come to room temperature, then turn on the power.

[SERVICE CALL xxxx]

An unrecoverable error occurred, or part replacement that must be performed by a service technician is required.

Note the number displayed, then switch off the sub power. After you switch off the power, inform your authorized Roland DG Corp. dealer of the number that appeared on the display.

[SHEET TOO SMALL CONTINUE?]

The size of the data is larger than the printing or cutting area of the loaded media.

To continue performing output without correcting this, press ENTER. At this time, the portion extending beyond the printing or cutting area is not output. To stop output, stop sending data from the computer, then hold down SET UP for one second or longer. Make the printing or cutting area wider, such as by replacing the media with a larger piece of media or by changing the positions of the pinch rollers, then send the data again.

[SHEET SET ERROR SET AGAIN]

SET UP was pressed even though no media is loaded.

Press any key to clear the error. Load media and pull back the loading lever, then press SET UP.

[EDGE DETECTION] is set to "ENABLE," but transparent media was loaded.

Raise the loading lever, set the [EDGE DETECTION] menu item to "DISABLE," then reload the media.

☞ P. 78, "Using Transparent Media"

The loaded media is too small.

Press any key to clear the error. Replace with media of usable size.

[HEAD HEIGHT ERROR]

The height-adjustment lever for the print heads was operated improperly.

Operation cannot be continued. Switch the sub power off, then back on. To change the head height, use the [HEAD HEIGHT] menu.

☞ P. 88, "Adjusting Head Height to Match Media Thickness"

[TEMPERATURE IS TOO LOW **°C]

The temperature of the location where the machine is installed has fallen below the ambient temperature at which the machine can operate.

Operation cannot be continued. Switch off the sub power. The displayed temperature is the current ambient temperature of the installation location. Bring the installed location to a temperature at which operation is possible (20 to 32°C) and allow the machine to come to room temperature, then turn on the power.

[DATA ERROR CANCELING...]

Output was stopped because a problem was found in the data received.

Operation cannot be continued. Check whether the data contains errors. Also, check for a problem with the connector cable or the computer, and redo the operation from the step of loading the media.

[PINCHROLL ERROR LOWER PINCHROLL]

(SET UP) was pressed without first lowering the pinch rollers.

Press any key to clear the error. Pull back the loading lever, then press (SET UP).

The pinch rollers were raised while (SET UP) was illuminated.

The error is cleared automatically after a short wait. Never move the loading lever while printing is in progress.

[PINCHROLL ERROR INVALID RIGHT POS]

The right pinch roller is positioned at a location where it does not pinch the media.

Raise the loading lever and move the right pinch roller to the correct location.

☞ P. 38, "Cutting Off the Media"

[PINCHROLL ERROR INVALID LEFT POS]

The left pinch roller is positioned at a location where it does not pinch the media.

Raise the loading lever and move the left pinch roller to the correct location.

☞ P. 31, "Loading and Cutting Off Media"

[WRONG CARTRIDGE]

A ink cartridge that cannot be used was installed.

Remove the ink cartridge to clear the error. Use a cartridge of the specified type.

[AVOIDING DRY-UP TURN OFF POWER]

The print heads were forced to standby position to prevent them from drying out.

Operation cannot be continued. Switch the sub power off, then back on. Opening the front cover while printing is in progress causes an emergency stop. Never allow the print heads to remain in this state.

[MOTOR ERROR TURN POWER OFF]

A motor error occurred.

Operation cannot be continued. Switch off the sub power. Next, eliminate the cause of the error, then immediately switch on the sub power. If the machine is allowed to stand with the error uncorrected, the print heads may dry out and become damaged. This error may be caused by such factors as a mistake in loading the media, a media jam, or an operation that pulls the media with excessive force.

The media has jammed.

Carefully remove the jammed media. The print heads may also be damaged. Perform head cleaning, then perform a printing test and check the results.

The media was pulled with excessive force.

Excessive tension was applied to the media, and additional action is necessary to recover from this state. First, move the loading lever to the rear and adjust the media to create a small amount of slack, then switch on the sub power.

[CANCELED FOR MOTOR PROTECTION]

Continuous operation made the pump motor become hot, and so operation was paused.

Press any key to clear the error. Allow the machine to stand for approximately 40 minutes before resuming operation.

[LONG MEDIA CLAMP IS INSTALLED]

Media cutoff was attempted even though [MEDIA CLAMP] is set to "LONG."

To prevent malfunction or damage to the machine, media-cutoff operations are not performed when [MEDIA CLAMP] is set to "LONG." Use (ENTER) to go back to the original screen, then either detach the media clamps, or replace them with short media clamps and set [MEDIA CLAMP] to "SHORT."

☞ P. 38, "Cutting Off the Media"

[CANCELED FOR MOTOR PROTECTION]

An unusable print head is installed.

Switch off the sub power. After you switch off the power, inform your authorized Roland DG Corp. dealer or Roland DG Corp. Call Center.

Chapter 7

Specifications

7-1 Usable Media

Conditions for Usable Media

Media width
182 to 762 mm (7.2 to 30 inches)

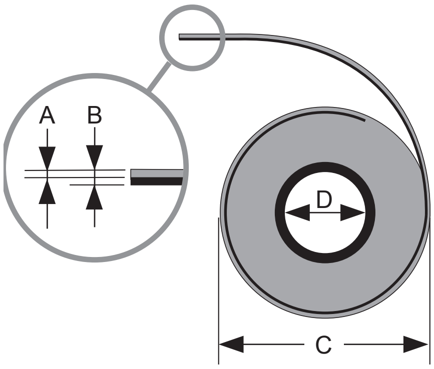
A) Cuttable media thickness
0.08 to 0.22 mm (3.2 to 8.6 mil)
(depending on media composition)

B) Maximum media thickness (including backing paper)
Printing only: 1.0 mm (39 mil)
When performing cutting: 0.4 mm (15 mil)

C) Roll outer diameter
Maximum 180 mm (7.1 inches)

D) Paper tube (core) inner diameter
50.8 mm or 76.2 mm (2 inches or 3 inches)

Roll weight
20 kg (44 lb.)



Other conditions
Media such as the following cannot be used

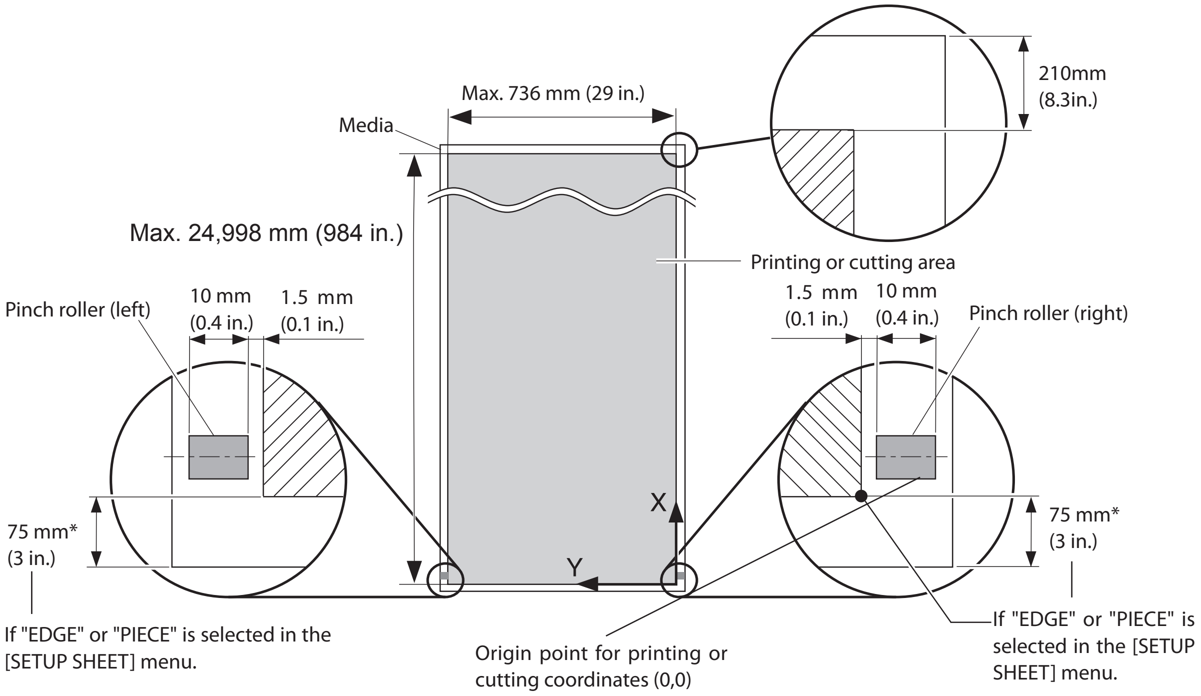
- ○ Media having an inward curl (i.e., media whose print surface is on the inner side of the roll)
- ○ Media whose end is attached to the paper tube (core)
- ○ Media which is severely warped or which has a strong tendency to reroll
- ○ Media that cannot withstand the tensioning of the media take-up or feed system
- ○ Media whose paper tube (core) is bent or crushed
- ○ Media that bends under its own weight when loaded
- ○ Media on a sagging roll
- ○ Media that is rolled unevenly
- ○ Media that has an electrostatic charge

This machine cannot necessarily print every kind of media. When selecting media, be sure to carry out testing in advance to make sure that satisfactory printing quality is obtained.

7-2 Printing or Cutting Area

Maximum Area

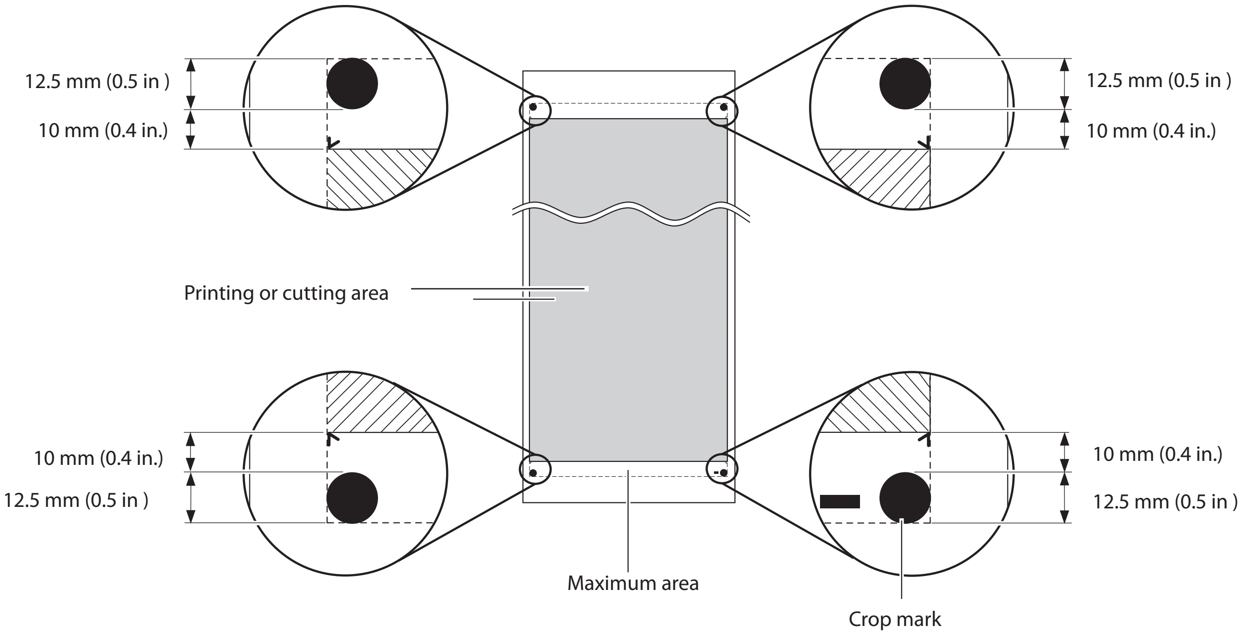
The printing or cutting area along the horizontal plane (the direction in which the carriage moves) is determined by the position of the pinch rollers.


Max. 736 mm (29 in.)
Media
210mm
(8.3in.)
Max. 24,998 mm (984 in.)
Printing or cutting area
Pinch roller (left)
10 mm
(0.4 in.)
1.5 mm
(0.1 in.)
1.5 mm
(0.1 in.)
10 mm
(0.4 in.)
Pinch roller (right)
X
Y
75 mm*
(3 in.)
75 mm*
(3 in.)
If "EDGE" or "PIECE" is selected in the [SETUP SHEET] menu.
Origin point for printing or cutting coordinates (0,0)
If "EDGE" or "PIECE" is selected in the [SETUP SHEET] menu.

*Margin length required by the media take-up and feed systems is approximately 1,100 mm (43 in.)

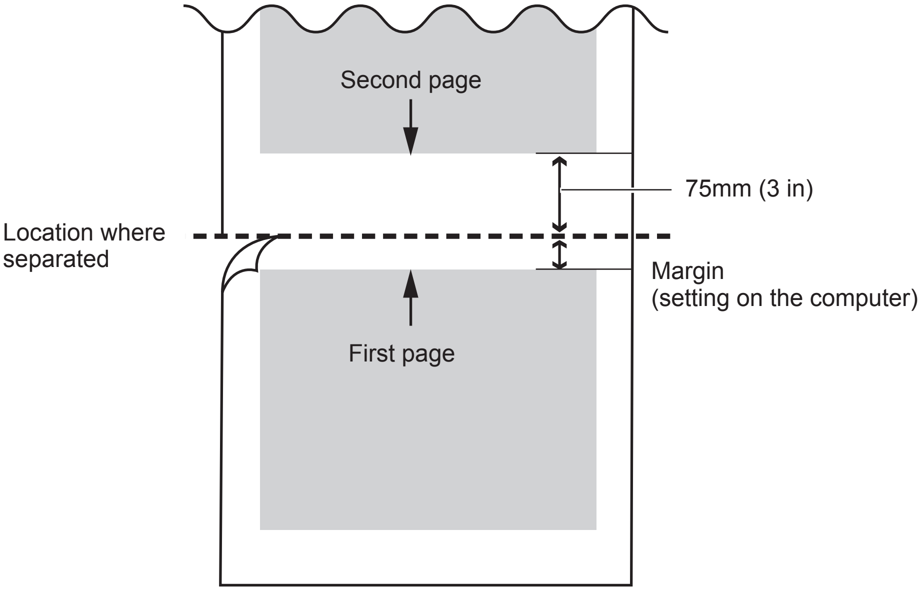
Maximum Area When Using Crop Marks

When crop marks are used, the printing or cutting area is reduced from the maximum area by an amount equal to the crop marks.


12.5 mm (0.5 in)
10 mm (0.4 in.)
12.5 mm (0.5 in)
10 mm (0.4 in.)
Printing or cutting area
10 mm (0.4 in.)
12.5 mm (0.5 in)
10 mm (0.4 in.)
12.5 mm (0.5 in)
Maximum area
Crop mark

Media-cutoff Location During Continuous Printing

When a media-cutoff command is sent from the computer, the cutoff location on the media is as shown in the figure below.


Second page
75mm (3 in)
Location where separated
Margin (setting on the computer)
First page

7-3 About the Blade

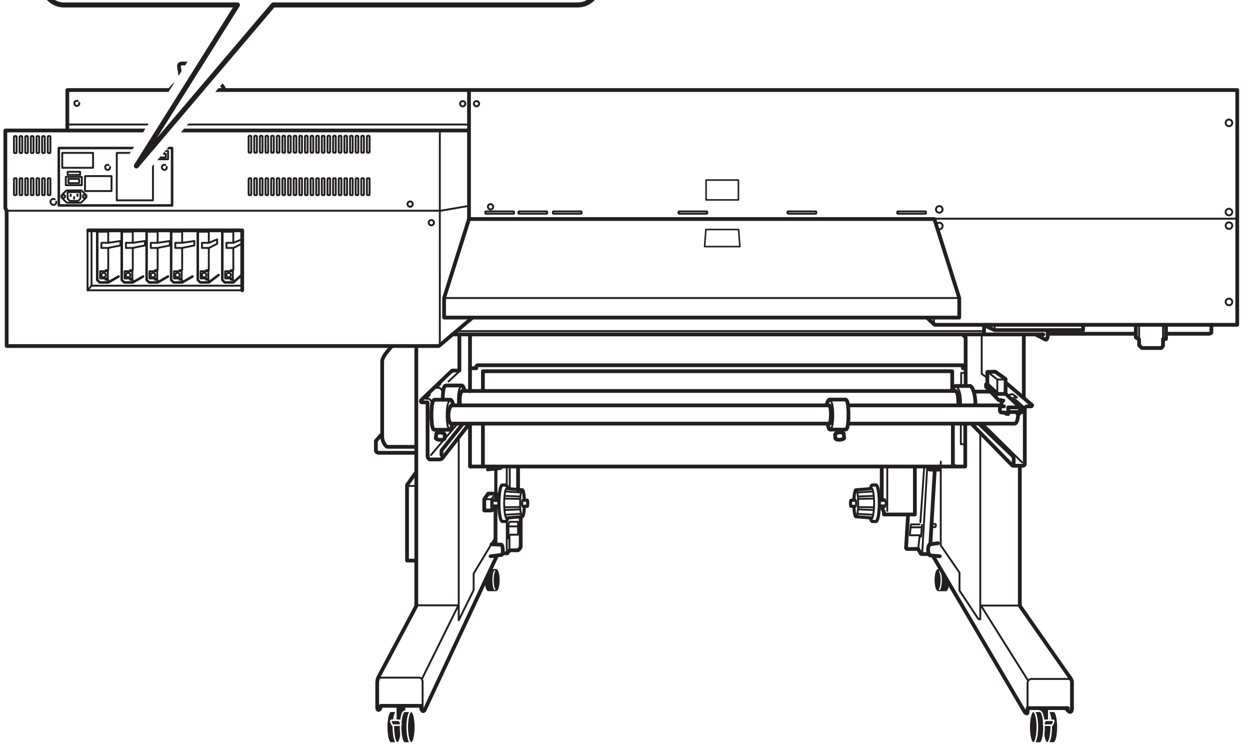
The cutting conditions and the service life of the blade change according to the media and the operating environment, even when using identical blades. The service life also differs according to the type of blade. A rough guide is shown below.

Blade	Media	Blade force	Amount of blade offset	Blade life* (general guide)
ZEC-U1005	General signage vinyl	50 to 150 gf	0.25 mm	8000 m
ZEC-U5025	General signage vinyl Fluorescent vinyl Reflective vinyl	30 to 100 gf 120 to 200 gf 100 to 200 gf	0.25 mm 0.25 mm 0.25 mm	4000 m 4000 m 4000 m

When uncut areas remain even when the blade force is increased to a value that is higher by 50 to 60 gf than the values shown in this chart, then replace the blade.

*The values for "Blade life" are estimates for when cutting media of identical type.

7-4 Locations of the Power Rating and Serial Number Labels



Serial Number
This is required when you seek maintenance, servicing, or support. Never peel off the label or let it get dirty.

Power Rating
Use an electrical outlet that meets the requirements for voltage, frequency, and amperage given here.

7-5 Specifications

		LEC-330
Printing/cutting method		Piezo ink-jet method/media-moving method
Acceptable media	Width	182 to 762 mm (7.2 to 30 in.)
	Thickness	Maximum 1.0 mm (39 mil) with liner, for printing Maximum 0.4 mm (16 mil) with liner and 0.22 mm (9 mil) without liner, for cutting
	Roll outer diameter	Maximum 180 mm (7.1 in.)
	Roll weight	Maximum 20 kg (44 lb.)
	Core diameter	50.8 mm (2 in.) or 76.2 mm (3 in.)
Printing/cutting width (*1)		Maximum 736 mm (29 in.)
Ink cartridges	Types	ECO-UV 220-cc cartridge
	Colors	Six colors (cyan, magenta, yellow, black, white, and gloss)
Ink-curing unit		Dual UV LED Lamp
Printing resolution (dots per inch)		Maximum 1440 dpi
Acceptable tool		Roland CAMM-1 series compatible
Cutting speed		10 to 600 mm/s (10 to 300 mm/s in media-feed direction)
Blade force		30 to 300 gf
Blade offset compensation		0.000 to 1.500 mm (0 to 0.0591 in.)
Software resolution (when cutting)		0.025 mm/step (0.000984 in./step)
Distance accuracy (when printing) (*2)		Error of less than ±0.3% of distance traveled, or ±0.3 mm, whichever is greater
Distance accuracy (when cutting)		Error of less than ±0.4% of distance traveled, or ±0.3 mm, whichever is greater When distance correction has been performed (when the setting for [CUTTING MENU] - [CALIBRATION] has been made): Error of less than ±0.2% of distance traveled, or ±0.1 mm, whichever is greater
Repetition accuracy (when cutting) (*3)		±0.1 mm or less
Alignment accuracy for printing and cutting (*4)		±0.5 mm or less
Alignment accuracy for printing and cutting when reloading media (*5)		Error of less than ±0.5% of distance traveled, or ±3 mm, whichever is greater
Media take-up system	Roll outer diameter	Maximum180 mm (7.1 in)
	Roll weight	Maximum 20 kg (44 lb.)
Interface		Ethernet (10BASE-T/100BASE-TX, automatic switching)
Power-saving function		Automatic sleep feature
Power supply	Voltage and frequency	AC 100 to 240 V ±10%, 50/60 Hz
	Required power capacity	Maximum 4.2 A
Power consumption	During operation	Approx. 370 W
	Sleep mode	Approx. 15.3 W
Acoustic noise level	During operation	64 dB (A) or less
	During standby	40 dB (A) or less
Dimensions (with stand) (*6)		2200 (W) × 820 (D) × 1260 (H) mm (86.6 (W) × 32.3 (D) × 49.6 (H) in.)
Weight (with stand)		177 kg (390.2 lb.)
Environment	Power on	Temperature: 20 to 32°C (68 to 90°F) (22°C [72°F] or more recommended) , humidity: 35 to 80% (no condensation)
	Power off	Temperature: 5 to 40°C (41 to 104°F), humidity: 20 to 80% (no condensation)
Accessories		Exclusive stands, power cord, blade, blade holder (XD-CH2), media clamps, replacement blade for separating knife, cleaning kit, software RIP (Roland VersaWorks) , User's Manual, etc.

*1
The length of printing or cutting is subject to the limitations of the program.

*2
With Roland PET film, print travel: 1 m
Temperature: 25°C (77°F), humidity: 50%

*3
The following conditions must be met:
○ Media type: Media specified by Roland DG Corp.
○ Roll media must be loaded on the shaft.

○ [PREFEED] menu item must be set to "ENABLE."
○ Side margins: 25 mm or more for both the left and right margins
○ Front margin: 35 mm or more
○ Excluding expansion/contraction of the media
Range for assured repetition accuracy
○ Length 3,000 mm

*4
○ Provided that media length is under 3,000 mm
○ Temperature: 25°C (77°F)
○ Excluding possible shift caused by expansion/contraction of the media and/or by reloading the media.

*5
○ Media type : Roland PET film
○ Data size: 1,000 mm in the media-feed direction, 736 mm in the carriage-movement direction
○ No lamination
○ Automatic detection of crop marks at 4 points when media is reloaded.
○ During cutting, [PREFEED] menu item must be set to "ENABLE."
○ Temperature: 25°C (77°F)
○ Excludes the effects of slanted movement and of expansion and contraction of the media.

*6
During operation of the media take-up system, an operating range of approximately 80 millimeters back from the front edge of the dancer roller is required.

Roland

1000006169

R1-090601